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MCO P7000.14K FDB 19 Jun 91

MARINE CORPS ORDER P7000.14K

From: Commandant of the Marine Corps

To: Distribution List

Subj: MARINE CORPS COST FACTORS MANUAL

Ref: (a) MCO 7000.12A

Encl: (1) LOCATOR SHEET

1. Purpose. To provide a convenient and reliable source of general cost data of various activities for use in developing costs of alternative courses of action.

- 2. Cancellation. MCO P7000.14J.
- 3. Background. This Manual is designed to facilitate the rapid estimation of selected costs for planning, programming, decisionmaking, and cost and economic analyses. The reference pertains. The factors contained in this Manual have a wide variety of applications and can be used in numerous combinations to meet given requirements. For best results, locally derived cost factors governing specific situations should be used in conjunction with this Manual. This Manual is a tool for the commander/resource manager to improve the efficiency and effectiveness of the Marine Corps.
- 4. Summary of Revision. The majority of changes were in updating the information in the tables.
- 5. Action. Marine commanders and resource managers are encouraged to use this Manual in the estimation of costs in the planning and programming processes, in cost and economic analyses and in programs designed to improve cost consciousness. (NOTE: This Manual should not be used in budget formulation or as a substitute for normal staffing.)
- 6. Recommendations. Recommendations concerning this Manual are invited and will be submitted to the Commandant of the Marine Corps (FBD) via the appropriate chain of command or call, commercial (703) 614-2206/AUTOVON 224-2206.

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- 7. Reserve Applicability. This Manual is applicable to the Marine Corps Reserve.
- 8. Certification. Reviewed and approved this date.

E. T. COMSTOCK Fiscal Director of the Marine Corps

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LOCATOR SHEET

Subj: Marine Corps Cost Factors Manual

Location:

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of this Manual.

ENCLOSURE (1)

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Received	Date Entered	Signature of Person Entering Change
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MARINE CORPS COST FACTORS MANUAL

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SUMMARY OF DATA

This chart is included to assist the reader in quickly determining the types of data contained in the Manual. Refer to individual sections and tables for specifics as to data composition and methodology of computation.

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CHAPTER 1

INTRODUCTION

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 1

INTRODUCTION

1000. ORGANIZATION

- 1. This Manual is organized conceptually as follows:
 - a. An introduction to the manual:

Chapter 1-INTRODUCTION

b. General data by functional area:

Chapter 2-MANPOWER

Chapter 3-TRAINING

Chapter 4-LOGISTICS

c. Data by type organization:

Chapter 5-STANDARD ORGANIZATIONS

Chapter 6-NOTIONAL TASK FORCES

d. Cost adjustment data:

Chapter 7-COST COMPARISONS AND PROJECTIONS

e. Supporting reference material:

APPENDIX

A-Sources of Marine Corps Support and Funding
B-Life-Cycle-Cost (LCC)

C-Glossary

2. Chapters 2 through 7 are subdivided into sections and/or tables to facilitate their use. Content and Introduction pages are provided for each chapter and section to describe its contents and use. Cost factors are provided in tables in appropriate chapters and sections. Footnotes define terms, explain data formulation and sources, indicate the HQMC office of Prime Responsibility (OPR) for the tables, and provide other valuable information. The tables are marked with an alphanumeric code, which indicates the chapter or section, and sequence within a chapter or section as appropriate. For instance, Table 4B2 indicates it is the second table in Section B of chapter 4.

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1001. NATURE OF DATA

- 1. The data provided reflect either established figures (e.g., base pay) or computed figures (e.g., cost of operating and maintaining equipment). Computed cost data are average costs as opposed to marginal costs. For first approximations in general planning, these estimates may normally be used in lieu of marginal figures. Additional analysis would be necessary to obtain marginal data, which may be required for detailed planning and programming.
- 2. Extreme climatic or unusual environmental conditions were not considered in the formulation of the cost factors. Adjustment of factors, based on judgment and past experience, may be required to cover such situations.
- 3. Information is provided in each table as to the dates the factors were computed. Adjustments may be necessary to account for such things as inflation, time value of money, pay raises, and organizational changes. Other adjustments which may be required should be based on current valid data.
- 4. With the exception of such data as pay and entitlements, most information contained in this Manual is applicable only to the peacetime Marine Corps. Wartime force structures, consumption rates, etc., could be considerably different from those reflected in this Manual.
- 5. Most of the cost factors were computed from actual expense data. When such data was not available, budge data was used.

In some cases, where only aggregated summary data was available, the cost factors were derived through allocation.

6. The cost factors pertain to classes of personnel or types of equipment, organizations, or activities rather than to appropriations or operating budgets; therefore, most of the computed figures do not relate directly to those in Marine Corps budgets. In general, these cost factors are not for use in budget formulation.

1002. <u>USE</u>

- 1. This Manual was designed to facilitate the rapid estimation of selected costs for planning, programming, and cost and economic analyses (see the current edition of MCO 7000.12). The factors can be used in a wide variety of applications and in numerous combinations. For instance, the factors can be used in computing life-cycle costs (see appendix B) and in analyses such as the following:
 - a. Operations in peacetime.
- b. Actual or planned changes in Marine Corps personnel levels, organization/structure, equipment, training, and manpower policies.
- 2. The following steps should normally be followed in conducting a cost analysis through the use of this Manual:

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- a. Determine precisely the areas to be costed and the degree of detail required. For instance, it may suffice in one case to address merely the total number of Marines involved, whereas in another case it may be necessary to deal with grades and entitlements.
- b. Review this Manual thoroughly to understand fully its use and limitations. Particular attention should be paid to the introduction of each chapter and section. This review will improve the validity of results and minimize overall efforts.
- c. Consult the table of contents to determine which tables would provide the required information.
- d. Compute the estimated expense for each costing area using the factors contained in this Manual. If additional accuracy is required and time allows, the following refinements can be undertaken:
 - (1) Use any locally derived factors which may be

more valid for a specific situation than the general factors contained in this Manual.

- (2) Adjust cost data for inflation and time value of money, using Tables 7A1 and 7A2, respectively. (Each table contains information as to the date the factors were computed and/or expected to be valid without adjustment. Annual updates of this Manual are planned.)
- (3) Modify data to account for any significant changes in costs which may have occurred since the last update of this Manual.
- (4) Adjust data, if necessary, to compensate for unusual situations. For instance, if a proposed training exercise in the Arctic were being costed, it might well be assumed fuel consumption would be higher than the average rates given in this Manual. If greater accuracy is needed it would be appropriate to adjust the factors based on judgments and past experience.
- e. Contact the OPR, which is designated in each table, if questions arise.
- f. Add the figures derived for each costing element to determine total cost. Use Table 7A2, Present Value/Discount Factors, if cost comparisons are desired for alternative courses of action in which funding would be made over three or more years.
- g. Include in the costing report a complete explanation of how costs were computed with a list of assumptions which were made to facilitate the estimate. This information is invaluable to decisionmakers who must judge the validity of the analysis.
- 3. The following example, using hypothetical numbers, illustrates the use of this Manual:

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- a. <u>Problem</u>. To estimate the Marine Corps costs of adding a fourth, full strength, rifle company to an infantry battalion (initial one time or startup costs).
- b. <u>Approach</u>. The approach to this problem will be to first make a rough estimate of the cost and then to show how various refinements make the estimate more accurate.

c. Rough Estimate

(1) Assumptions. The initial estimate will use the

following assumptions:

- (a) That the equipment needed is onhand at the base.
- (b) That no personnel will be added to other organizations to support the new company.
- (c) That the company will be added at full T/O
 (six officers, 176 enlisted
 (see Table 5A1A).
- (d) That there will be no Marine Corps end strength increase. All personnel are assumed to be taken from other, existing assets stationed at other bases in CONUS. Opportunity costs will be considered.
- (e) That only Marine Corps costs are at issue. Navy costs for corpsmen are not considered.
- (2) <u>Calculation</u>. With the foregoing assumptions, the calculation becomes relatively simple. The main cost comes from transferring the personnel from all over CONUS. Assuming the average cost of operational moves is \$8,043 for officers, and \$2,547 for enlisted (see Table 2D1 for actual costs).

Six officers times \$8,043 per move = \$48,258

167 enlisted times \$2,547 per move = \$425,349

the total cost would be \$473,607.

- d. <u>Refined Estimate</u>. Clearly, the assumptions used in the initial estimate are too simple for many situations. Accordingly, the above assumptions can be refined to make the estimate better fit the actual situation.
- (1) <u>Equipment Transportation</u>. In the example, it was assumed all the equipment was onhand. In reality, the equipment may be in storage at one of the logistics bases. Accordingly, assume the unit being created is at Camp

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Lejeune, and the equipment is in storage at MCLB Albany. Assume a company's equipment weighs 10 tons, and the cost per ton mile by rail cargo over 10,000 pounds is \$0.049 (see Table 4D12 for actual costs). The local transportation office estimates the distance from Camp Lejeune to MCLB Albany to be 544 miles. The computation would be as follows:

\$10\$ tons times 544 miles times .049 per ton mile = \$266.56

(Note: This assumes there are no additional costs for loading or unloading equipment.)

- (2) <u>Equipment Purchase</u>. A set of equipment may not be "free". It must be either drawn from existing stores, and therefore have to be replaced, or it must be procured new. In either case, assume the cost of a set of equipment is \$673,000 (see Table 5A1B for actual cost).
- (3) <u>Support Billets.</u> In the initial estimate, it was assumed no support personnel would be added. This is not realistic. Assume the H&S Company would require 23 additional enlisted personnel to support the new company. The cost of transferring these individuals would be:
 - 23 enlisted times \$2,547 per enlisted move = \$58.581
- (4) Transfer from Overseas. The assumption that all the Marines required would come from bases within CONUS may or may not hold true. Accordingly, assume 10 percent of them would have to come from overseas. The revised transfer case would be as follows:

five officers from within CONUS		
times \$8,043 per move	=	\$ 40,215
150 enlisted from within CONUS		
times \$2,547 per move	=	\$382,050
one officer from overseas		
times \$8,916 per move	=	\$ 8,916
17 enlisted from overseas		
times \$2,494 per move	=	\$ 42,398
		\$473,579

(5) End Strength Increases. The situation may be that the new company would be staffed by increasing the Marine Corps' end strength rather than reallocating existing assets. Costing this can be difficult since some grades such as captains and first sergeants cannot be created from scratch. Assume the cost of this end strength increase is as follows:

Cost of:

```
167 new enlisted times $3,711 accession = $ 619,737 times $14,320 recruit training = $2,391,440 times $5,598 Marine Combat = $ 934,866 Training $3,946,043
```

six new officers times \$7,749 accession	= \$	46,494
times \$12,434 accession		
training	= \$	74,604
times \$36,946 The Basic School	= \$	221,676
times \$13,915 Infantry Officer		
Trng	= \$	83,490
	\$	426,264

Total cost of increased end strength = \$4,372,307

(Note: See Table 2E1 for actual accession costs, Table 3A1 for actual costs of schools/training.)

(6) Summary of Refined Estimate

	WITH	TF	RANSFERS	WITH	Α	CCE	ESSIONS
Equipment Transportation	=	\$	267	=	=	\$	267
Equipment Purchase	=	\$	673,000	=	=	\$	673,000
Support Billets	=	\$	58,581	=	=	\$	58,581
Transfers	=	\$	473,579	=	=	\$	0
or							
End Strength Increase	= :	\$	0	=	=	\$4,	,372,307
	-	\$1,	205,427		_	\$5,	,104,155

e. <u>Comparison</u>. The contrast between the rough estimate of \$473,579 and the refined estimates of \$1,205,427 and \$5,104,155, clearly demonstrates the value of realistic cost estimates. The data in this Manual is specifically designed to allow the user to make a cost estimate at whatever level (rough to refined) is required. By tailoring the data in this Manual for the local situation and combining the results with common sense, relative cost information can be developed for virtually all situations.

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

2000. GENERAL

- 1. This chapter provides data pertaining to Marine Corps manpower costs. The information is presented in six sections as follows:
 - A. Military Personnel Costs

- B. Civilian Personnel Costs
- C. Advisory Service Costs
- D. Permanent Change of Station (PCS)/Travel
- E. Military Personnel Accessions
- F. Support Costs
- 2. The particular characteristics, formulation, and use of data are explained in each section. Tables with explanatory footnotes that include sources of data and OPR, are included as appropriate.

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

SECTION A: MILITARY PERSONNEL COSTS

2100. <u>INTRODUCTION</u>

- 1. The largest and most visible military personnel cost is for pay and allowances, but there are other significant military personnel expenses. Although the kinds of personnel costs incurred by military personnel are similar to those incurred by civilian employees, non-pay personnel costs are proportionally larger for the former than for the latter.
- 2. This section contains data pertaining to various types of military personnel costs by pay grade. This data includes not only compensation, but also the cost of military benefits and support. Data for pricing military labor on an hourly, daily, or monthly basis and the amounts authorized for special types of pay, enlistment/reenlistment bonuses, and rations are provided.

2101. DATA USE

1. The primary intent of the data contained in this section is the estimation of the average man-year cost, in general, of military manpower. These costs are particularly useful when available local data or time is insufficient to permit a more specific estimate.

- 2. Care must be exercised in using the total column of Tables 2A1 and 2A2, as some of the cost elements may not be applicable in all cases.
- 3. Table 2A3 provides military labor rates for processing work which is expressed as units of time.
- 4. Tables 2A4 through 2A6 are useful for estimating the cost of monetary incentives. However, the cost data contained in these Tables are not to be added to those in Tables 2A1, 2A2, or 2A3, as they are already included as part of the composite standard rate, which is the basis for Tables 2A1, 2A2, and 2A3.
- 5. Table 2A7 can be used in estimating ration cost for a dining facility or for the approximate cost of rations related to a field exercise. Additionally, the individual entitlement/reimbursement data can be employed for overall fiscal planning or general knowledge/information.
- 6. Table 2A8, Composite Personnel Rates for the Selected Marine Corps Reserve (SMCR), is designed so the cost impact of changing the number of drills or the length of annual training duty can be easily determined.

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- 7. Table 2A9 is provided for information only. It contains data on "Regular Military Compensation" which approximates what is considered "salary" in the civilian world. It should not be used for economic analyses, but can be used by Marines when applying for loans and credits.
- 8. In costing military personnel, it is important to recognize the costs fall into two broad classes: mission and overhead support tail. Overhead support tail includes those who provide administrative support services and those (patients, prisoners, transients and students) who are temporarily unavailable for work.

Table 24", -- 4455AC DEFICER MUNICIPAL COST ROS 5450 Cap of Apr 1970)

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0-18	92,172	84,009	r.	1,311	6,762	1.323	129,104
6-2	88,595	45,000		2.558	5,725	1,858	155 , 187
C-8	80,396	54,025	C C	1,500	6,706	1,179	152,546
c-7	67,573	41,033	C C	1,938	5,172	1,829	126,616
C۵	78,540	25,589	c c	1,433	1,445	290	··a,#5
¢-9	65.894	60,633		1,988	4,364	129	W2,0-5
6.4	55,667	17,606		3,988	2,984	797	79,952
0-3	42,315	14,386	1	5,480	>,007	72	65,111
02	55, 204	91,279		3,496	1.827	704	56,136
o·1	24,596	8.150	1	5,986	1,119	692	42,294
u -2	23,704	15,471	,	3,988	1,642	773	71,545
H 3	42,376	12.555	,	3,906	1,599	690	60,577
4-2	34, ISS	10.574	,	5,988	1,353	710	\$1,939
ні	33,628	9,599	٩	3,996	1,348	ecz	45,419

There is no clear calculation for the total cost of fielding a Marine. However, this table gives a usable approximation of the total cost. It is important to note this is the total cost to the Government. Only the standard rate, average support, and retirement are paid by the Marine Corps. This table is directly comparable to Tables 2B1-2B4 on civilian manpower costs.

- 1/ The annual pay and allowance rate consists of all items in the MPMC appropriation (except retired pay accrual, which is shown in a separate column), and average annual PCS travel of \$5,548.
- 2/ Calculated using the DoD standard method: 43.9 percent of base pay for officers and enlisted.
- 3/ Unemployment compensation is paid to ex-servicemen under a special Department of Labor program. Cost for unemployment compensation, and dependency and indemnity compensation are based on the DoD report "Average Cost of Military and Civilian Manpower (FY 80)" escalated to FY 89. Amounts are allocated to grade based on number of separations; hence the amounts in each grade differ.
- 4/ This is the average cost per Marine man-year for support provided by Marine Corps bases and air stations. Only O&MMC

amounts are included. This figure was calculated by taking the total support cost and dividing by the number of man-years. The total support cost was calculated by adding the following FYDP PEN's: 26494M, 26495M, 26496M, 72891M, 72894M, 72895M, 72896M, 85794M, 85795M, 85796M, 91294M, 91295M, and 91296M. When estimating the cost of increasing or decreasing the FMF population, the incremental support cost of \$1,256 (\$553 per man-year for unit operating cost, \$664 per manyear for base support costs, and \$39 per man-year for base

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communications) should be substituted for the average support cost of \$3,988. To avoid double counting, neither the \$1,256 nor the \$3,988 should be included when this table is used with Table 2F1.

- 5/ Income tax advantage is the additional income military personnel would have to receive in order to be left with their current disposable income (take-home pay) if their allowances were taxable. Federal income tax is computed using the standard deduction and 1989 tax rates.
- 6/ Dependency and indemnity compensation is paid by the Veterans' Administration to survivors of deceased military personnel. Prior year costs are escalated to FY89.

Data Sources: Military Personnel, Marine Corps FY90 President's Budget Submission of January 1990; DoD Report of Average Cost of Military and Civilian Manpower (1981), FY-90 Composite Standard Rates (Jan 1990); Dod Report on Selected Military Compensation Tables (January 1989 Pay Rates).

OPR: CMC (FDB-MPMC), Phone (703) 614-5524, AUTOVON 224-5524

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6.0	25,826	11,617	ar	1,545	1,555	706	\$3,442
C T	31,495	9,229	ET.	1,555	1,55	666	فقمراه
6-6	27,17]	7,743	87	1,563	1.419	635	11,542
r.e	25,516	6,475	ਹਾ	1,545	1,720	ωş	55,521
C 4	20,1%	5,458	2r	1,545	1,250	ac	23,939
E -3	10, 25	4.55	**	1.944	A07	566	24,575
C-#	17,524	4,259	6	1,515	305	272	21,015
F-1	12,625	1,622	OT	1,515	770	546	0,15

There is no clear calculation for the total cost of fielding a Marine. However, this table gives a usable approximation of the total cost. It is important to note this is the total cost to the Government. Only the standard rate, average support, and retirement are paid by the Marine Corps. This table is directly comparable to Table 2B1-2B4 on civilian manpower costs.

- 1/ The annual pay and allowance rate consists of all items in the MPMC appropriation (except retired) pay accrual, which is shown in a separate column), and average annual PCS travel of \$1,404.
- 2/ Calculated using the DoD standard method: 43.9 percent of base pay for officers and enlisted.
- 3/ Unemployment compensation is paid to ex-servicemen under a special Department of Labor program. Cost for unemployment compensation, and dependency and indemnity compensation are based on the DoD report "Average Cost of Military and Civilian Manpower (Fy80)" escalated to FY90. Amounts are allocated to grade based on number of separations; hence the amounts in each grade differ.
- 4/ This is the average cost per Marine man-year for support provided by Marine Corps bases and air stations. Only O&MMC amounts are included. This figure was calculated by taking the total support cost and dividing by the number of man-years. The total support cost was calculated by adding the following FYDP PEN's: 26494M, 26495M, 26496M, 72891M, 72894M, 72895M, 72896M, 85794M, 85795M, 85796M, 91294M,

91295M, and 91296M. When estimating the cost of increasing or decreasing the FMF population, the incremental support cost of \$1,256 (\$553 per man-year for unit operating cost, \$664 per man-year for base support costs, and \$39 per man-year for base communications) should be substituted for the average support cost of \$1,543. To avoid double counting, neither the \$1,256 nor the \$1,543 should be included when this table is used with Table 2F1.

- 5/ Income tax advantage is the additional income military personnel would have to receive in order to be left with their current disposable income (take-home pay) if their allowances were taxable. Federal income tax is computed using the standard deduction and 1989 tax rates.
- 6/ Dependency and indemnity compensation is paid by the Veterans' Administration to survivors of deceased military personnel. Prior year costs are escalated to FY90.

Data Sources: Military Personnel, Marine Corps FY90 President's Budget Submission of January 1990; DoD Report of Average Cost of Military and Civilian Manpower (1981), FY90 Composition Standard Rates (Jan 1990); DoD Report on Selected Military Compensation Tables (January 1990 Pay Rates).

OPR: CMC (FDB-MPMC), Phone (703) 614-5524, AUTOVON 224-5524

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Table 2A3 - MARINE CORPS FY90 COMPOSITE STANDARD RATES (1) (as of Nov 1990)

PAY	ANNUAL	MONTHLY	DAILY	HOURLY
GRADE	RATE-	RATE-	RATE-	RATE-
0-10	124,481	10,373	478.77	59.85
0-9	122,622	10,219	471.62	58.95
0-8	122,084	10,174	469.55	58.69
0-7	117,706	9,809	452.72	56.59
0-6	100,900	8,408	388.08	48.51
0-5	86,692	7,224	333.43	41.68
0-4	72,818	6,068	280.07	35.01
0-3	61,900	5,158	283.08	29.76
0-2	49,483	4,124	190.32	23.79
0-1	36,697	3,058	141.14	17.64
W-4	65,495	5,458	251.90	31.49
W-3	54,929	4,577	211.27	26.41

W-2	44,689	3,724	171.88	21.49
W-1	43,227	3,602	166.26	20.78
E-9	57,294	4,775	220.36	27.55
E-8	46,873	3,906	180.28	24.54
E-7	40,768	3,397	156.80	19.60
E-6	34,866	2,906	134.10	16.76
E-5	30,068	2,506	115.65	14.46
E-4	25,652	2,138	98.66	12.33
E-3	21,406	1,784	82.33	10.29
E-2	18,763	1,564	72.17	9.02
E-1	16,427	1,369	63.18	7.90

- 1/ Average cost of MPMC appropriation items of pay, allowances, retirement, and unemployment (enlisted only) attributable to each pay grade. The annual rate also includes PCS costs as directed by NavCompt.
- 2/ Monthly, daily, and hourly rates were derived by dividing the annual rate by 12, 260, and 2,080 respectively.

Data Source: NavCompt Note 7041

OPR: CMC (FDB-MPMC), Phone (703) 614-5524, AUTOVON 224-5524

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Table 2A4 - SPECIAL TYPES OF PAY(1)
(AS OF APR 1990)

SPECIAL DUTY ASSIGNMENT PAY

	OFFICER	ENLISTED
CAREER PLANNER	N/A	660 (55)
MARINE SECURITY GUARD	N/A	1320 (110)
DRILL INSTRUCTORY	N/A	(165, 220)
RECRUITER(3)	N/A	(165, 220, 275)
DEMOLITION DUTY	1320 (110)	1320 (110)
HOSTILE FIRE/IMMINENT DANG	GER PAY	
	1320 (110)	1320 (110)
DIVING DUTY PAY	1800 (150)	1320 (110)
PARACHUTE JUMPING	1320 (110)	1320 (110)
PARACHUTE JUMPING (HA)	1980 (165)	1980 (165)
FOREIGN DUTY PAY(4)		
E-7/8/9		270 (23)

E-6	240	(20)
E-5	192	(16)
E-4	156	(13)
E-3	108	(9)
E-2	96	(8)
E-1	96	(8)

- 1/ Common annual entitlements for eligible officer and enlisted personnel monthly entitlements are shown in parentheses.
- 2/ Drill instructor duty pay is based on job tenure at the following rates: 0-3 months, \$165; over 6 months, \$220.
- 3/ Recruiting duty pay is based on job tenure at the following rates: 0-3 months, 3-9 months, \$220; OVER 9 months, \$275.
- 4/ Applicable to enlisted personnel who are assigned to duty at certain designated locations.

Data Source: DoDPM Military Pay and Allowance Entitlements Manual

OPR: CMC (MPP), Phone (703) 614-1519, AUTOVON 224-1519

2-11

TABLE 2A5 FLIGHT PRV¹ (AS OF AFR 1990)

CHARGE PERSONNEL

	895#Z	C:L	וינינ	744	(PT)	16 11	36367	V 4	н 3	4·Z	4 -1
witg	2453	6628	6486	7611	7607	1675	1966	TEC	68.0	1875	1500
- 1841 PW	1523	3000	344	2016	3100	1381	1500	3000	9:06	1900	7230
LTIES AND	1722	1360	1321	1320	1325	1320	1200	1220	.250	1530	1520

BALL BOHE BERSOOM

	ME-201	HEC.	ดน	\$ * *	56"	EFL	ιτι	THL.	177
erraer we cease:	2811	240	844	ж	1602	1500	1221	1320	1326
AFLICATIONS (COACHE)	1350	1220	1320	1920	IUr	1170	1276	1326	.220

- 1/ Common annual entitlements for eligible officer and enlisted personnel.
- 2/ Officers with more than 25 years officer service are not entitled to draw ACIP unless below the pay grade 0-7 and

assigned to an operational flying billet. This does not apply to Warrant Officers.

3/ Crew flight pay for officers is based on such things as years of flight duty, years of commissioned service, and grade. The figures provided in this table are estimates of what a typical Marine in each grade receives. As such, these figures are for general planning only; data for specific individuals should be obtained from Marine Corps Disbursing personnel.

Data Source: DoD Military Pay & Allowance Entitlements Manual & FY90 Authorization Act

OPR: CMC(MPP), Phone (703) 614-1519, AUTOVON 224-1519

2-12

Table 2A6. - BRLISTMENT/ROTAL)STMENT HERITAGE (AB OF JAK 1990)

116E 3:906	ANALASTIC SE CONTINUE	HETERO OF FAMORE	<u> CLIGIECLERY</u>
DENSIAN	See current action of MCO for current search seeks and singible 400%	Luio San	Sec commont odn, on of MCO 1188.57
SELECTIVE Acculosmeda	Monorthy basels cay a years of additional obligated service a materials	Ste Lury Sun/remainder in casal remeal installments	See current edition of east 7924, 24 and 42301 7239 semina

Data Source: DoD Military Pay Allowance Entitlements Manual.

OPR: CMC (MPC), Phone (703) 614-5689, AUTOVON 224-5689

rable 3A7. - COST OF RATIONS¹ (FY90)

TITE OF BUTTONS 35935	F####Z \$1904016	major mane
5-Polytime in Dinine Facility ("A" or "3" motors)" 0045 000505	28 ,000 7 ,72v	43-E7 44-22
		HEC
Contained Baltima (MP to come of left by 5) Hard FFF at Operations and Training Hard God Alices and Training		\$11.57 \$11.57
Sittlement Allowances		
Authorized to Euleron Superator Joseph	F4,506 10,621	33.85 5.87
C under - morete	124	5.4
Reniona-In-Kind Bob Avelyable	4,691	£.e.

PA 104 PERPENSORAL SAMES FOR LIGHTY STALES

	ROOF	Chinades	900014	PCES ⁵	
150.6	C7 ⁶ POSSONEL	OFFISH ALTRIANISMS PERSONNAL	ACE STOR	990511/165 540 0164	
· Insurier	47,53	60.60	¥1.13	F1.10	
Junch	1.25	D.85	7.45	2,15	
Olmer	1.45	6.63	8.15	2.15	
2 nunct	1.55	24.3	2.55	2.45	
Olimer/Brunch	2.25	1.45	3.63	2.05	
daliday feet	7.15	1.72	2 - 15	3.19	

- 1/ A ration is -day's food for an individual. Types of rations
 are: "A" (canned/packaged goods with perishable items,
 prepared in dining facility); "B" (same as "A" without
 perishable items); and Meal Ready to Eat (MRE) (individual
 packaged meal designed to be prepared by the individual).
 The cost of rations is paid from the Military Personnel,
 Marine Corps appropriation and is included in the standard
 composite rates (Tables 2A1, 2A2, and 2A3)
- 2/ Approximately 47 percent of CONUS and overseas personnel authorized to subsist, do not do so. Cost included in annual standard composite rates given in Table 2A2.
- 3/ Non-FMFPac included FMFLant and all other commands outside FMFPac.
- $4/\,$ MCO P10110.14K and Marine Corps bulletins in the 10110 series outlines who may purchase rations.
- 5/ Applicable to officers and civilians only. Not applicable when meals are prepared and served in the field.
- 6/ Defined in Marine Corps bulletins in the 10110 series.

Data Sources: Marine Corps FY90 Budget and Marine Corps bulletins in the 10110 series.

OPR: CMC (FDB), Phone (703) 614-5524, AUTOVON 224-5524

Table 2AB - CONDUSTE PERSONNEL RATES FOR SMCR (FY90)/91

		70ST	DETE								
0005		OAF	σ								
17.1					,		- ,-	FFESTART.	10	mai	100,900
Grand :	Alle	LATERU	P.28	EAST COME	414	660040	AIF	FEFELINE	GRECORD	AIR	ANGODSTAG
FWI. O	T196.57	94251.59	#225.55	49,437,00	¥10,580.00	43.691.00	15,791,60	\$3,862,00	956,998,99	19,32,60	\$[7,6%, C
\$17,29	\$100.17	29, 2012	\$195.75	\$7,627.00	25, 530,00	45,107.00	55,700.00	\$2,822.00	577,664,30	\$46,789.00	\$15,475.00
6°32.76	\$1/9.25	\$159.55	SITELES	\$6,671,00	58,221,00	62,755,00	\$5,000,00	\$3,562,00	\$15,225,33	\$15,028.00	\$14,198.00
\$111.62	4133.45	4138.25	\$15T.57	56,605,00	57,466.00	\$2,402.00	23,727,52	13,562.00	\$11,685,33	\$14,088.00	\$12,342.00
39 2.22	m116.09	\$143.06	\$124,75	\$4,671.00	50,554.00	\$2,057.00	12,30 .00	42,812.00	570,545.30	\$12,780.00	\$11,588.00
\$72.23	479.15	587.52	994.25	53,705,00		F1.6/4.00	511,000,00	\$3,502,00	PV.29(1.3)	\$10,400,00	997,567,00
F48.1\$	763.14	\$61.55	\$ 66.77	\$2,549.00	4] ,6:9,00	at 264 on	W.76	\$1,867.00	\$7,797.30	49,822.0	40,771.00
E146.27	\$127.55	\$126.05	\$110,77	45 .328.00	¥7.+99.00	\$2,281,00	\$2,800,00	\$1,862.00	\$11,625.20	\$15,670,02	448,577.00
											111, 24,00
											19, 09,70
362.Air	\$10.06	479.86	\$47,023			\$1,507.00	5",439.00	85,822.00	44,67.30	59,422,00	59,252.00
Est. Al	396.53	3116.6	30.7 -	\$.00.2.00	25 .686.00	\$2,111.00	52,179,00	\$2,612.00	510,662.30	110.727.00	\$10,595.60
											BY, "ALLE
											95,461.00
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											47,74.00
											14,797.00
										BA 544.10	Bb_100,14
											16, 209, 00
132,12	\$24,91	\$76,04	\$16.75	#1,175.00			17.0.00	45,627.00	15,957.30	56,096.00	\$6,1'4.00
	FFT (9038) 2 (77,79 (72,75 (77,79 (77	FY1. 00 THYS. 57 2477, 79 24101.47 4772, 79 24101.47 4771, 79 24101.47 4771, 79 24101.47 4771, 79 24101.47 4772, 23 4771, 15 4772, 72 4772, 70 4772, 72 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772, 70 4772, 74 4772	TOTAL TOTAL	FFTLD/Y	DOST PER DOST PER			COST SEC	COST See	COST SEC COST FOR COST FOR COST FOR COST SEC COST SEC	COST SCC COST SCC

- 1/ This table allocates to grade the RPMC funded costs of the SMCR for FY90. All FY90 costs in RPMC Budget Activity 1 (Unit and Individual Training and Budget Activity II (Other Training and Support), except Platoon Leaders Class and Junior ROTC were included.
- 2/ The following are included in cost per drill: basic pay, retired pay accrual, flying duty pay, and enlisted subsistence-in-kind. cost per day of ATD includes the preceding costs plus basic allowances for quarters, employer's FICA, and subsistence. ATD cost per day does not include travel paid per diem costs.
- 3/ Inactive duty training consists of the 48 regularly scheduled paid drills plus additional paid drills used for maintaining MOS proficiency and for planning and administrating unit training. Funds for additional paid drills are budgeted on the basis of estimated number of drill periods. Officer and enlisted personnel costs are separately identified, but the information available does not permit allocation by grade. A cost per officer/enlisted manyear, therefore, was used. This cost was calculated by dividing the amount budgeted for additional paid drills for officers and enlisted personnel, respectively, by the number of officers and enlisted personnel in SMCR units. Inactive duty training costs were estimated by multiplying the cost per drill for each grade by 48 and adding for officers (air) \$1058, officers (ground) \$238, and enlisted (air) \$3 and enlisted (ground) \$16, for the cost of additional paid drills.

- 4/ ATD is used primarily for unit training. The ATD period consists of 14 day's training and 1 day's travel. ATD costs were estimated by multiplying the cost per day of ATD by 15 and adding \$363 for officers and \$358 for enlisted personnel to cover travel and per diem costs.
- 5/ The personnel pipeline consists of activities that are not directly associated with SMCR units, but which indirectly support them by increasing the military proficiency of individual selected reservists. The personnel pipeline includes Reserve pay categories F and P, mobilization training, school tours, special training, and administration and support. costs include pay and allowances, employer FICA, subsistence, uniforms, and travel and per diem. Since these costs support the SMCR as a whole, the total was divided by the number of officers and enlisted personnel to obtain cost per man-year. Pipeline costs for air and ground are the same for both officers and enlisted personnel.
- 6/ This averages air and ground components to arrive at an average cost per grade.

Data source: RPMC Presidential Budget Submission, Jan 1990.

OPR: CMC (Code MO-B) phone (703) 614-1840, AUTOVON 224-1840

2-16

TABLE 2A9 - RECULAR MILITARY COMPENSATION (RMC) (AS 07 JLM 1990)

PAP ANACO 2 3 70 12 18 20 22 COMPLEXIONS OFFICERS 1.00 1.00 1.00 98131.38 97559.50 96073.94 5,400 5,400 5,400 0.37 0.33 0.33 0.00 0.00 0.00 D-10 0-P C.00 C.30 1.00 a.oe a.oe 0.03 0.03 1.00 0.DC 0.DC 0.00 57705.TP 0,00 0,00 20,000 20,000 20,000 20,000 1,10) 1,00 0/610.21 11,16 0.00 9520.77 1079 ACC 97.52 70170_53 7,40 3,40 0.03 L. 40 -1 181 !:: 11,181 0.00 57195.77 51977,47 0.00 3.00 5.00 7700/1.15 792741.45 Teals 27 99729.45 SZZISLAS SMŽAJAI).W).W 20126.41 #310.77 81694.83 47752,33 41774,19 51:20,90 45:21.81 9250,42 50356.34 4700), 42 55615.149 42118.39 45757.56 (2464.56 0-2 0-4 43726.83 45238.TL 94523.45 1.00 O.DC 3.00 0.fc 0.00 35997.78 19, 20102 3.00 7440.15 3.W. 4.00 90051.55 1,00 3,00 204025.75 24/39.69 0.00 D.DC 0,00 HID CAULT THE DIVING HE MINDE BEING 0.00 0.00 0.00 3.00 0.00 \$6676.5" \$7722.0" \$8557.42 1.4468.61 68990.22 4161".01 28061.62 \$1466.53 \$3825.40 25575.36 \$4307.62 \$2658.19 VARIATION CONTICERS 5.00 0.00 0.66 2.00 0.00 0.00 0.00 27501.09 45143.TD 25864.15 1009.71 C.33 C.33 C.33 Z.75E.54 Z.75E.54 Z.33CE.AA 2007.7.54 0.00 0.30 0.30 0.30 20256.39 34191.38 0.00 0.00 93.0 03.0 0.03 0.00 79971,41 40655,04 0.00 0.00 0.00 0.00 30x42.55 300x7,72 Section of 5.00 417)Y.86 36699.00 4080.71 \$8150.51 49664.19 41775.39 5425 1.00 50544 .74 57023 .18 25111.28 6.00 34894, 10 39426, 69 25945, 21 2547, 22 4,00 29-22 AS 220-27-35 20-27-55 0-53 0.00 0.00 0.00 2607,37 0.00 0.00 21999,56 0.09 33.0 34,8935 1.00 2015.66 8473.06 256/4.86 20052.49 27904.72 36047.00 32637.10 D.23 D.33 2209.W 2011.2 (2015) 51 (6) 78, 79 21756.95 18833./3 2" (744.7E 19220-15 24529.11 0.66 a.00 n,or 0.00

(AS OF JAN 1990)

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2-17

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This table shows "RMC" or the approximate annual salaries of military personnel by grade and years of service. RMC is defined as the sum of basic pay, basic allowance for quarters (including any variable housing allowance), basic allowance for subsistence and an estimated tax advantage for the nontaxable allowances. These figures should not be used for economic analyses.

Data Source: "Selected Military Compensation Tables January 1990 Pay Rates, " OASD (FM&P) MM&PP Directorate of Compensation

OPR: CMC(MPP), Phone (703) 614-1519, AUTOVON 224-1519

17389,00 0.00

0.00

1493,64 14545.21

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04.27,040 0.03 0.03

r, 19 C.30 C.30

MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

SECTION B: CIVILIAN PERSONNEL COSTS

2200. <u>INTRODUCTION</u>

- 1. This section contains data pertaining to every pay level of civilian personnel in the Marine Corps. Civilian personnel costs were developed by grade using two separate categories, one for General Schedule (GS) or classified employees and the other for Wage Rate employees.
- 2. The data consists of total compensation to the employee plus all of the quantifiable expenses incidental to employment. They include base pay, overtime and holiday pay, retirement cost, life insurance, health benefits, terminal leave, training, and worker's compensation.
- 3. These costs are comparable with the total military manpower costs in Tables 2A1 and 2A2. They are also comparable with, though not identical to, the cost in the DoD report "Average Cost of Military and Civilian Manpower."
- 4. O&M support costs were excluded because specific data is not currently available.
- 2201. <u>DATA USE</u>. The primary intended use of Tables 2B1 through 2B4 is to estimate average manpower costs when actual expense data is unavailable.

Table 301 - 01911. An MAN-YIJAR (20)() OUR GENERAL SCHEMME 1/ (209 Merry AS DE JAN 1990)

93Y 34Y44	12°/7	OTHES PART	LIFE HMATERY 2-	#25.T-1 #-4-611X	TERRITAL	DESCRIPTION OF THE PERSON OF T		CHARGEST SE	1974.
25-1	11.990	180	11	1,480		374	617	1,391	16,335
55 2	15,033	196	75	1,485		262	888	1,316	17,490
54-3	16,790	224		1,565	121	754	1,001	50	16,193
55-4	15.517	وبعق	55	1,466	147	430	1,124	720	X,778
45-5	16,48"	277	111	1,465	166	57-	1,007	·m	22,259
hd-O	20,598	7009	161	1,545	163	539	1,401	.20	26,539
55-7	221,681	943	127	1,460	25.00	787	1,006	*84	27,134
65 a	22,35	350	152	1,445	226	504	1,754	205	29,817
68- 4	28,001	0	108	1, 697	20.0	Tio	1,905	100	17,711
[5-4]	40,744		164	1,644	2,00	+74	20,000	**	90,740
65 11	25,875	D	215	1,445	301	529	2,364	.22	38,039
PB-12	40,611	0	265	1,607	364	127	2,774	100	45,455
65794-13	48,257		250	1,40	430	123	5,224	194	54,288
65754-14	57,034	Ď	262	1,455	506	520	3,880	· <u>-</u>	63,083
is/re-IS	47,112 Ly	0	40	1,607	0	The	4,564	240	76,153
(Z) M-16-5/	08,192 AV	V	467	1,45	υ	155	5,317	v	20,111
exes 1/	missa ay	0	509	1, 607	0	1/5	5,005	0	64,595

(ESTIMATE AS OF JAN 1990)

- 1/ These costs were derived as outlined below:
 - a. average base pay costs for GS employees by grade were derived from the Office of Personnel Management (OPM) Schedule dated 1 October 1989 and for Wage Rate employees, from the November 1989 Department of Defense Wage Fixing Authority pay scales.
 - b. Overtime and holiday pay were computed at 1.5 percent of average base pay by grade.
 - c. Retirement cost of the Government was calculated was at 20.4 percent of average base pay, with about one third of this funded by the Marine Corps, and the rest is unfunded. An additional contribution is made by the employee.
 - d. Life insurance costs were computed by applying the rate of 0.6 percent to average base pay.
 - e. Health benefits were computed by dividing estimated FY89 health benefit contributions by FY89 U.S. direct hire civilian man-years. Costs have been escalated

- f. Terminal leave costs were derived for GS personnel by dividing the product of total terminal leave cost and the ratio of separations in a grade to total separations by man-years in a Grade. Costs have been escalated to FY90 dollars.
- g. The cost of workmen's compensation was computed by dividing its' total expenses to the Marine Corps in FY84 by total man-years. Costs have been escalated to FY90 dollars.
- h. The cost of unemployment compensation was derived by escalating the cost in the DoD report "Average Cost of Military and Civilian Manpower." This cost was escalated to FY90 dollars.
- i. O&M support costs were excluded because specific data is not currently available.
- 2/ Includes overtime and holiday pay. Grades higher than GS-8 were excluded because they rarely draw this pay.
- 3/ Currently, there are no GS/GM-16,17, or 18 personnel employed by the Marine Corps. Personnel who would normally be in those grades are presently in the Senior Executive Service at level 4 (i.e., ES-4).
- 4/ Limited to \$78,200 by section 5380 of title 5 of the U.S. Code.

OPR: CMC (LCO), Phone (703) 696-1038, AUTOVON 226-1038

2-21

Table 262 in an ion energy rost for Less part impressionly espaced. Ay the see that the see that

FRACE	Fan	PAN	LIFE Indomen: -	MERFELIE PERILA	PRAME PROBLEME	MORENER'S COMPENSATION	PC1180 40. 1	PARTHUS NORTHUS	
63°°	21.323	360	160	1.425	5.0	296	1,536	0	27,37
•3.5	28,377	368	146	1,455	3 2:	300	1,573	0	28,777
v9·3	25,855	300	155	1.455	255	306	1,741	0	30,194
V9- 6	27,617	411	ld4	1,457	24T	2 15	1,86%	0	5: ,6:
*5.5	58,55.	434	17%	1,465	261	374	1.49	667	33,67
V5 4	30,555	420	Ira	1,667	27%	125	2,274	220	37,50
49-7	и,яи	200	102	1.457	349	225	2) गर्ल	0	36,92
24-9	13,344	510,	200	1,455	500	337	2,349	0	8,64
*5.4	34,744	521	206	1,145	313	366	2,365	507	40,34
rz .a	36,85	261	216	l, ann	300	245	2,454	122	<11,66
4-"	17. 159	556	222	1.45>	254	247	2,522	0	22,67
- · · · · ·	36,336	5'5	230	1,455	348	255	7,917	1,86	46,16
2. 5	37,743	.09	245	1,147	3724	153	2,00	438	46,11
6-14	61,865	ωF	251	1. 455	,77	255	2,84T	900	20,76
"5	46,577	661	264	1,43>	291	261	7,990	>,154	42.35
124	90,746	60%	2.7	1,455	716	365	7, 165	(56,03

(SUPERVISORY) PERSONNEL 1/ (ESTIMATE AS OF JAN 1990)

- 1/ These costs were derived as outlined below:
 - (a) Average base pay costs for GS employees by grade were derived form the Office of Personnel Management (OPM) Schedule dated 1 October 1983 and for Wage Rate employees, from the October 1983 Department of Defense Wage Fixing Authority pay scales. They have been adjusted for yearly pay raises.
 - (b) Overtime and holiday pay were computed at 1.5 percent of average base pay by grade.
 - (c) Retirement cost to the Government was calculated at 20.4 percent of average base pay, with about one-third of this funded by the Marine Corps and the rest is unfunded. An additional contribution is made by the employee (7 percent of base pay).
 - (d) Life insurance costs were computed by applying the rate of 0.6 percent to average base pay. The rate was derived by dividing the Marine Corps cost of regular group life insurance by total Marine Corps obligations for U.S. direct hire civilian employees in FY81.
 - (e) Health benefits were computed by dividing estimated FY82 health benefit contributions by FY83 U.S. direct hire civilian man-years. Costs have been escalated to FY90.
 - (f) Terminal leave costs were derived for GS personnel by dividing the product of total terminal leave cost and the ratio of separations in a grade to total separations by man-years in a grade. Costs have been escalated to

FY90.

- (g) The cost of workmen's compensation was computed by dividing its total expenses to the Marine Corps in FY84 by total man-years. Costs have been escalated to FY90.
- (h) The cost of unemployment compensation was derived by escalating the cost in the DoD report "Average Cost of Military and Civilian Manpower." Costs have been escalated to FY90.
- (i) O&M support costs were excluded because specific data is not currently available. However, this amount is probably quite small.

OPR: CMC (LCO), Phone (703) 696-1038, AUTOVON 226-1038

2-22

(ab. a 345 - -), bil (ab per-mai det) for late gen-(sotterne as of abi 1990)

MILE W	789	PAT	INNERNE LINE	SECTION 1	LEWE	COMPRESSOR		DOMESTICAL COM	гагла
90.1	15,636	ट्टा	95	1,605	167	70	1,575	,	19,042
u ·>	17,777	29 4 m	158	1,465	157	257	1,278	1	27,216
90.15	19,168	205	119	1,465	175	291	1,333	1	32,00
4.4	20,599	313	129	7,468	122	206	1,514	1	طمردة
46.5	22,551	200	155	1,446	257	7000	4,755	100	24,30
W -6	26, 285	Take	146	1,446	275	яь	1,651	5/7	29,01
u_ T	25,650	338	156	1225	221	276	1,785		30,80
Marie Co	27,511	443	165	-, 444	294	556	1,40	,	52,04
90.00	25,781	435	175	445	21	224	1,671	625	30,02
w -10	10,536	274.	1+3	440	27)	348	2,074	5/4	#),W
W-111	32,091	451	192	-46	258	369	2,779	- 1	57,00
w12	38, 938	501	F20	- 200	12.5	706	2,272	j.	34,50
W-13	36,078	525	213	-46	574	228	2,38	á	W,E
4. 16	36,562	540	219	- 22	125	3/2	7,400	š	
ξ. iš	38,002	570	223	1,000	157	766	2,524		

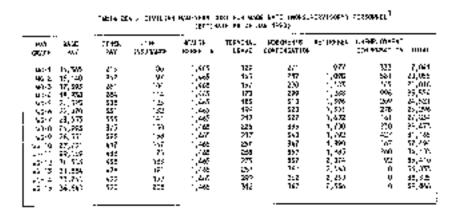
PERSONNEL 1/(ESTIMATE AS OF JAN 1990)

- 1/ These costs were derived as outlined below:
 - (a) Average base pay costs for GS employees by grade were derived from the Office of Personnel Management (OPM) Schedule, 1 Oct 1983, and for Wage Rate employees, from the Oct 1983 Department of Defense Wage Fixing Authority pay scales. They have been adjusted for yearly pay raises.
 - (b) Overtime and holiday pay were computed at 1.5 percent of average base pay by grade.
 - (c) Retirement cost to the Government was calculated at 20.4 percent of average base pay, with about one-third

- of this funded by the Marine Corps and the rest is unfunded. An additional contribution is made by the employee (7 percent of base pay).
- (d) Life insurance costs were computed by applying the rate of 0.6 percent to average base pay. The rate was derived by dividing the Marine Corps cost of regular group life insurance by total Marine Corps obligations for U.S. direct hire civilian employees in FY81.
- (e) Health benefits were computed by dividing estimated FY82 health benefit contributions by FY83 U.S. direct civilian man-years. Costs have been escalated to FY90.
- (f) Terminal leave costs were derived for GS personnel by dividing the product of total terminal leave cost and the ratio of separations in a grade to total separations by man-years in a grade. Costs have been escalated to FY90.
- (g) The cost of workmen's compensation was computed by dividing its total expenses to the Marine Corps in FY84 by total man-years. Costs have been escalated to FY90.
- (h) The cost of unemployment compensation was derived by escalating the cost in the DoD report "Average Cost of Military and Civilian Manpower." Costs have been escalated to FY90.
- (i) O&M support costs were excluded because specific data is not currently available. However, this amount is probably quite small.

OPR: CMC (LCO), Phone (703) 696-1038, AUTOVON 226-1038

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- 1/ These costs were derived as outlined below:
 - (a) Average base pay costs for GS employees by grade were derived from the Office of Personnel Management (OPM) Schedule, 1 Oct 1983, and for Wage Rate employees, from the Oct 1983 Department of Defense Wage Fixing Authority pay scales. They have been adjusted for yearly pay raises.
 - (b) Overtime and holiday pay were computed at 1.5 percent of average base pay by grade.
 - (c) Retirement cost to the Government was calculated at 20.4 percent of average base pay, with about one third of this funded by the Marine Corps and the rest is unfunded. An additional contribution is made by the employee (7 percent of base pay).
 - (d) Life insurance costs were computed by applying the rate of 0.6 percent to average base pay. The rate was derived by dividing the Marine Corps cost of regular group life insurance by total Marine Corps obligations for U.S. Direct hire civilian employees in FY81.
 - (e) Health benefits were computed by dividing estimated FY82 health benefit contributions by FY83 U.S. direct hire civilian manyears. Costs have been escalated to FY90.
 - (f) Terminal leave costs were derived for GS personnel by dividing the product of total terminal leave cost and the ratio of separations in a grade to total separations by manyears in a grade. Costs have been escalated to FY90.
 - (g) The cost of workmen's compensation was computed by dividing its total expenses to the Marine Corps in FY84 by total man-years. Costs have been escalated to FY90.
 - (h) The cost of unemployment compensation was derived by escalating the cost in the DoD report "Average Cost of Military and Civilian Manpower." Costs have been escalated to FY90.
 - (i) O&M support costs were excluded because specific data is not currently available. However, this amount is probably quite small.

OPR: CMC (LCO), Phone (703) 696-1038, AUTOVON 226-1038

MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

SECTION C: ADVISORY SERVICE COSTS

2300. INTRODUCTION

- 1. Advisory service cost factors contained in this section pertain to average man-hour costs of special research projects relating to scientific/technical matters and/or management procedures. Contract Advisory and Assistance Service (CAAS) is often acquired to supplement Government agency efforts and is selected on the basis of competitive pricing and performance rating.
- 2. Table 2C1 provides average cost per man-hour for CAAS and Government agency research. Total costs are broken out by component; i.e., direct labor, labor overhead, general and administrative, and profit or fixed fee.

2301. DATA USE

1. Cost factors contained in this section can be used to make rough comparisons between CAAS costs and those of Government agency research. However, the figures should be used for general planning only, as the factors for CAAS are average numbers based on a wide range of salaries and indirect costs; while those for Government agencies are tied to a single representative pay level. Due to the difference in pay scales between private industry and the Government, a problem requiring upper level managerial talent would probably be more expensive than indicated by the table. Accordingly, problems requiring more than a rough cost estimate should be done with actual costs, if possible.

TABLE 201. — PROTEONY ECONS PER PYCHASI MAK-YKA β^{\dagger} (48 DK MAR 90)

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004 06 07 909/061 ₇ 908/062	21.63	ት. ፓ	42.59	Tubh	49.62	4.24	\$1,17
BOVOSABLA BIŞAYY BABRAYAS	51.64	**.5	40,15	976	s0,15	M/C	N 13

- 1/ Average hourly rates are based on updated actual costs from a sampling of 1986 and 1987 contracts, with annual adjustments made thereafter to escalate rates to FY90 dollars.
- 2/ For contract support service, rate is based on a review of direct labor costs in recent contracts. For Government research, rate corresponds to the full man-year cost of an average GS-13, which is representative of staff accountants, economists, statisticians and scientists performing this function.
- 3/ Includes cost of annual leave, sick leave, holiday pay, health insurance, life insurance, terminal leave, workmen's compensation, unemployment compensation, training, retirement, and, in the case of Government employees, O&M operations and maintenance). Average 95 percent of direct labor for contract support services and 85.5 percent for Government agency research.
- 4/ For contract support service, includes salaries of top management and cost of advertising, postage, general supplies, telephone, utilities, etc., averages 17 percent of the sum total of direct labor and overhead. For Government agency research, these costs are included in labor overhead.
- 5/ For contract support service, averages 8.5 percent of the sum total of direct and indirect costs. Profit fixed fee is not applicable to Government agency research.
- 6/ Costs shown do not include separately billable direct costs such as travel, reproduction, computer time, etc.
- 7/ Pertains to commercial scientific research and management consulting services.

Data Source: See footnote 1.

OPR: Contract Info: CG MCRDAC (LBC) Phone (703) 696-1005, AUTOVON 226-1005 Government Info: CMC (FDB I&A) Phone (703) 614-2570, AUTOVON 224-2570

MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

SECTION D: PERMANENT CHANGE OF STATION (PCS) TRAVEL

2400. <u>INTRODUCTION</u>. This section contains average PCS cost per move by type of PCS and by pay grade. PCS moves are a significant element of military personnel costs. Although many personnel policies which affect PCS must be based on noncost criteria, the planner and decisionmaker should be aware of the cost implications.

2401. <u>DATA USE</u>. Table 2D1 is intended to be utilized to estimate the cost of average PCS moves by type and pay grade. Cost estimates for specific PCS moves should be obtained from CMC (Code FDB).

2-27

TABLE 201. * AVERAGE PCS DOSTS FER ROVE (as of Sab 1990)

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- - a) Accession Travel from place of enlistment or

commissioning (or from point of receipt of orders) to first (or new) permanent duty station or training school 20 weeks or more duration. Attendance at flight training by newly commissioned officers is considered an accession move.

- b) Training Travel within CONUS to and from permanent duty station to training school of 20 weeks or more duration. Excludes accession travel.
- c) Operational Travel within CONUS and within overseas areas (when no transoceanic travel is involved) between duty stations.
- d) Rotational Travel between CONUS and overseas permanent duty station, and travel between overseas permanent duty stations when transoceanic travel is involved.
- e) Separation Travel upon separation from service, between last permanent duty station and home of record or point of entry into the service.
- f) PCS movements in connection with the relocation of an organized unit.
- 2/ The cost of getting someone into the service (accession costs) were excluded since the table is designed for maintenance or nonaccession data computation.
- 3/ Nontemporary storage costs were allocated based on the number of officer and enlisted moves in each PCS category.

Data Source: FY90 MPMC President's Budget submission of January 1990

OPR: CMC (FDB-MPMC) Phone (703) 614-5524, AUTOVON 224-5524

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

SECTION E: MILITARY PERSONNEL ACCESSIONS

2500. <u>INTRODUCTION</u>. Military personnel procurement efforts are designed to satisfy officer and enlisted accession requirements. This section includes estimates of the cost

attributable to those efforts.

2501. $\underline{\text{DATA USE}}$. Table 2E1 is used to estimate cost per accession.

2-29

19310 ZET. PYRO POLITARY PERSONNEL RESOLUTERED CAF 09515 (49879 1991)

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- 1/ Recruiter assistants are part of the Regular Enlisted Recruiting Program. The command recruiter is an Active duty Marine from various commands assigned on a temporary basis to assist the recruiter with referrals.
- 2/ Enlisted bonuses are paid to Regular enlistees upon qualification for a bonus MOS. See Table 2A6 for additional information.
- 3/ Accession is defined as anyone who executes a contract resulting in a status with the Government.
- 4/ Computed by dividing total cost of the enlisted program (\$119,103,000) by Regular nonprior service accessions.
- 5/ Computed by dividing total cost of the Officer Program (\$13,948,000) by the number of officer accessions.

OPR: CMC (MRFL), Phone (703) 614-5689, AUTOVON 224-5689

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 2

MANPOWER

SECTION F: SUPPORT COSTS

2600. INTRODUCTION

- 1. This section contains average support costs per Marine man-year for those Marine Corps bases and air stations which support Fleet Marine Force (FMF) units in garrison.
- 2. Support costs are those annual recurring expenses, less reimbursables, attributable to the support provided to tenant organizations and to the support establishment itself.
 "Support" refers to services provided to organizations (e.g., base supply and communications) and to members thereof and their dependents (e.g., recreational and commissary facilities). Support costs considered here are funded through the Operation and Maintenance, Marine Corps (O&M,MC) appropriation. Other support costs such as military manpower, major procurement items and military construction are not considered.
- 2601. <u>DATA USE</u>. Support costs should be considered in estimating total expenses incurred by FMF units in garrison. The average annual support cost of an FMF unit in chapter 5 may

be estimated by multiplying the total number of personnel in that unit (including officers and enlisted personnel of the Navy as well as Marine Corps) by the per person amounts in Table 2F1. Since the cost of support is primarily a function of the number of military personnel supported, typical strength (vice Table of Organization (T/O)) should be used. Since these rates are for garrison situations only, application to Chapter 6 is usually not appropriate, as task-organized FMF units are normally deployed. Additionally, these rates represent average support costs and do not apply to changes in personnel strength. Such changes should be costed at the rates identified in Tables 2A1 and 2A2. The data in Table 2F1 can be used in Tables 2A1 and 2A2 instead of the Marine Corps average support cost if manpower costs for a particular base are desired.

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Table APT. - AVERAGE SUPPORT COST FER MARTHE MAN-YEAR¹

144	minute-loggrantes ²	PERSONAL	arear.osajac MSC des superior	REPARTS	E AN ERS PORTOREEL
AIR STUDION	DADISH PETMIT, NO	5,320	2,55	1,730	7,901
	F. Didug cox	4,635	6,955	11,799	4,901
	MARKET, SC	2,929	0,958	5) TRA	2,686
	TINA. FZ	3,016	4, 7/6	7,542	3,34
	COMMITTEE AND 1 1 2	1,597	4.14	5,741	7,732
	HERE C.	6,687	10,229	17,226	2.311
AIR STATION	rumana, ast ^a	234	4,233	0,764	21,467
CHELTOSPIELO	** * * * . W	666	185	650	4.boa
	1180 B, 45	274	2,437	5,116	3.660
8450	COMP BUTLES, 14	2,325	4,283	4,701	21,482
	COURT IN BIBBY, BC	1.557	3,200	2,617	26,758
	asse wante int, on	1.557	2,132	3.674	26,547
	OUR SHITE, LES	1.597	4,116	5,715	7,752
	Waste, 19	2,592	4,016	6,168	0,074

- 1/ Support costs refers to services provided by an installation to its tenants and to itself. These services are classified under base operations. Only O&M costs are included here.
- 2/ Limited to Marine Corps installations with FMF tenants.
- 3/ MCAS, Kaneohe Bay hosts a Marine brigade which includes aviation units.
- 4/ Funding for MCAS (H), Futenma and MCB, Camp Butler is provided through the same operating budget. Therefore, the two installations are treated as a single entity.
- 5/ MCB Camp Smith supports Hq, FMFPac only. All combat forces are assigned to the Marine brigade supported by MCAS, Kaneohe Bay. Funding for MCB Camp Smith and MCAS Kaneohe Bay is provided through the same operating budget. Therefore the

two installations are treated as a single entity.

Data Source: FY90 Operating Budget Authorizations/Expense

Report/NAVMC 10890.

OPR: CMC (FDB) PHONE (703) 614-8244, AUTOVON 224-8244

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 3

TRAINING

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SECTION A: TRAINING	COSTS	
INTRODUCTION	3100 3101 ION/ORDNANCE	3-5 3-5
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DATA USE	3201	3-27

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 3

TRAINING

3000. GENERAL

- 1. This chapter provides data pertaining to Marine Corps training costs. The information is divided into the following two sections:
 - A. Training Costs
 - B. Training Ammunition/Ordnance

- 2. Section A (Training Costs) breaks the cost of Marine Corps training down into comprehensive costs, aggregated training costs, and detailed course costs. The information is expressed in terms of cost per graduate.
- 3. Section B (Training Ammunition/Ordnance Costs) addresses the cost of high-usage training ammunition and ordnance for FMF organizations and weapons systems. Ammunition and ordnance account for a significant portion of the combat arms training. This section also addresses the cost of ammunition used in Marine Corps formal courses. Aviation ordnance expended by Marine aviation units is managed by the Chief of Naval Operations (CNO) with guidance published in OPNAVINST S8010.12D and the 8010 OPNAVNOTE series. Fleet commander-in-chiefs (FLT CINC's) determine annual noncombat expenditure requirements of aviation ordnance and allocate expendable ordnance to subordinate operational units. Ordnance training requirements are based on the matrices contained in the 8010 OPNAVNOTE series.
- 4. The data contained in each section is explained by a preface as to the particular characteristics, formulation, and use of each table. Each is annotated with footnotes, sources of data, and OPR, as appropriate.

MARINE CORPS COST FACTORS MANUAL

CHAPTER 3

TRAINING

SECTION A: TRAINING COSTS

- 3100. <u>INTRODUCTION</u>. Military training costs and requirements are becoming increasingly visible and subject to close scrutiny by Congress and the Office of the Secretary of Defense (OSD). To avoid potential problems, military personnel managers should be highly knowledgeable about the resources devoted to training. The data in this section consist of the costs per graduate and per man-year for Marine Corps courses, the cost of 2 week annual training by the Selected Marine Corps Reserve (SMCR) units, and costs for courses at other service schools.
- 3101. <u>DATA USE.</u> The data in this section is intended for use as follows:
- 1. Table 3A1 can be used to cost specific training programs.

- 2. Table 3A2 is useful for estimating the cost of Reserve annual training.
- 3. Because a substantial number of Marines are trained by other military services, the data in Table 3A3 is included to provide a complete picture of the resources used in the formal training of Marines. Since this training is conducted on a non-reimbursable basis, these costs should be kept completely separate from training costs funded by the Marine Corps.
- 4. Table 3A4 shows the cost of instructors for those schools for which the Marine Corps provides instructors. It is intended to provide a more complete costing picture for training.

Table 3A1. -- COST OF MARINE CORPS COURSES PER STUDENT (as of January 1990)

Course 1	Direct 2&3	Indirect 4	StuPay 5	Total 6
Officers Acquisition Training				
Officer Candidate	515	4088	7831	12434
Platoon Leaders Class-Jr.	518	2404	4606	7528
Platoon Leaders Class-Sr.	499	2356	4606	7461
Platoon Leaders Class-Combined	526	4169	7831	12526
NROTC	520	2421	5617	8558
Basic Military Training				
Recruit Training	2340	8637	3343	14320
Commissioned Officer Basic	746	12188	24012	36946
Warrant Officer Basic	370	6049	15433	21852
Marine Combat Training	603	3701	1294	5598
Professional Military Education				
SNCO Career	161	675	7295	8131
SNCO Advanced	298	1247	15769	17314
SNCO Reserve	54	226	2432	2712
SNCO Advanced Reserve	65	270	2828	3163
Amphibious Warfare	2161	7443	64431	74035
Amphibious Warfare Res				
Phase I	68	398	3304	3770
Amphibious Warfare Res				
Phase II	68	398	3304	3770
Command and Staff	3165	7097	72173	82435
Res Command and Staff Phase I & II	234	530	7772	8536

OccFld 01 Training				
Admin Officer	439	780	5714	693
Basic Typing	39	99	896	1034
Basic Typing & Pers				
Admin	15	26	2852	2893
Advanced Pers Admin	78	139	2633	2850
Senior Clerk	94	167	3693	3954
Ind Duty Admin	80	142	739	961
Administrative Clerk	38	66	2808	2912
Personnel Clerk	81	144	2896	3121
Unit Diary Clerk	84	149	2501	2736
Reserve Administration	46	81	739	866
Adjutant	183	325	5489	5997
OccFld 03 Training				
Infantry Officer	284	4644	8987	13915
Basic Infantry Orientation	34	4	1344	1382
Rifleman	127	62	2240	2429
Machine Gunner	440	81	2240	2761
Mortarman	376	79	2240	2695
Antitank	291	69	2550	2910
LAVcrewman	426	1287	4809	6522
Squad Leader	294	495	4226	5015
Platoon Sergeant Course	687	934	8637	10258
OccFld 11 Training				
Basic Electrician	1254	457	3716	5427
Basic Hygiene Equip				
Operator	438	785	7067	8290
Electrical Equipment				
Repairman	284	510	8670	9464
Journey Hygiene Equip				
Operator	1106	1325	11861	14292

Table 3A1. -- COST OF MARINE CORPS COURSES PER STUDENT (as of January 1990)

Course 1	Direct 2&3	Indirect 4	StuPay 5	Total 6
Journey Electrician	944	1390	6564	8898
Utilities Officer	292	424	20991	21707
Utilities Chief	599	1047	11631	13277

Basic Refrigeration Mech	435	773	4153	5361
Journey Refrigeration Mech	242	440	6564	7246
OccFld 13 Training				
Basic Engineer Equip Mech	275	306	5756	6337
Journey Engineer Equip Mech	540	949	15316	16805
Engineer Equip Chief	592	994	9443	11029
Engineer Equipment Officer	917	1461	13358	15736
Engineer Operations Chief	298	542	6334	7174
Basic Metal Worker	966	1739	5975	8680
Journey Metal Worker	963	1749	8061	10773
Journey Engineer Equip				
Operator	1134	2040	12898	16072
Basic Combat Engineer	180	295	3934	4409
Journey Combat Engineer	409	731	12668	13808
Combat Engineer Officer	358	529	18701	19588
Res Combat Engineer Officer	528	537	2672	3737
Res Engr Equipment Refresher	257	472	1612	2341
Basic Landing Support				
Specialist	188	86	2404	2678
Basic Engineer Equip				
Operator	723	1102	6193	8018
Minefield Maintenance	265	434	1612	2311
Landing Support Supervisor	132	60	1727	1919
Res Basic Combat Engineer	86	108	1020	1214
Res Combat Engineer NCO	151	639	978	1768
Res Landing Support				
Specialist	386	130	1020	1536
Specialise	300	130	1020	1330
OccFld 18 Training				
Assault Amphibian Crew	735	1978	3646	6359
Assault Amphibian Unit				
Leader	578	1555	4060	6193
Assault Amphibian Vehicle				
Officer	562	1512	10877	12951
Res Assault Amphibian Crewman	382	1030	1160	2572
Res AAV Unit Leader	674	1815	1612	4101
OccFld 21 Training				
Assault Amphibian Repairman	490	1318	6132	7940
Inter Assault Amphibian				
Repairman	550	1480	9328	11358
Elect-Optical Ordnance Repair	219	214	12760	13193
Elect-Optical Ordnance Tech	500	547	17735	18782
11. 12.				
OccFld 25 Training				
Command and Control Systems	2271	4648	70331	77250
Basic Communications Off	2271	8375	13902	24548
Res Com Officers Phases I				
& II	4544	486	6608	11638
Wire Chief	660	386	8061	9107

Field Radio Operator	542	316	4557	5415
Microwave Equip Operator	423	247	3812	4482
HF Comm Central Operator	479	280	4060	4819
Radio Chief	939	548	10364	11851
Comm Center Operator	631	368	6380	7379
Comm Center Chief	770	450	8982	10202
Operational Comm Chief	1313	768	13359	15440

Table 3A1. -- COST OF MARINE CORPS COURSES PER STUDENT (as of January 1990)

Course	Direct	Indirect	StuPay	Total
1	2&3	4	5	6
PLRS Master Station Operator	308	161	3685	4154
PLRS Master Station Maint	476	241	5643	6360
Res Field Radio Operator				
Refresher	125	72	1160	1357
Res Radio Chief Refresher	144	80	1612	1836
Res Oper Comm Chief				
Refresher	271	161	1612	2044
Oscild 20 Essiving				
OccFld 28 Training Basic Electronics	1038	483	6463	7984
Technician Theory	1256	547	11516	13319
Radio Fundamentals	571	315	4474	5360
Ground Radar Fundamentals	1228	172	2320	3720
Microwave Equip	1220	1/2	2320	3720
Maintenance	3272	1361	24184	28817
Telephone Switchboard Rpr	1254	693	8949	10896
Teletype Repair	649	357	6629	7635
Mobile Data Comm Terminal	0 1 2	33,	0025	, 033
Tech	1366	742	9860	11968
Mobile Comm Central Tech	552	302	6910	7764
Radio Technician	1393	653	12322	14368
Ground Radar Repair	2829	186	3646	6661
Ground Radar Technician	2664	426	7716	10806
Test Measurement & Diag				
Equip	1175	1188	21189	23552
Ground Radio Repair	1185	613	8369	10167
High Frequency Maint	177	804	1727	2708
Bancroft Full Maint	757	402	7767	8926
OccFld 30 Training				
Ground Supply Officer	160	929	15076	16165
Enlisted Supply Intermediate	146	77	8838	9061

Enlisted Supply Reorientation Basic Supply Enlisted Enlisted Warehouse	106 130	55 437	3455 2688	3616 3255
Intermediate	113	58	4687	4858
Subsistence Supply Man Res Enl Unit Supply	107	56	2569	2732
Refresher	83	43	994	1120
Enlisted Supply Independent				
Duty	80	42	1369	1491
Basic Packaging/Preserve Cr	229	43	4821	5093
OccFld 33 Training				
Dining Facilities Officer				
Indoc	232	39	1180	1451
Basic Food Service	390	67	3201	3658
Food Service NCO	465	82	7532	8079
Food Service Management	392	68	7255	7715
Senior Food Service	361	62	5070	5493
OccFld 34 Training				
Advanced Disbursing	339	85	9673	10097
Pers Fin Records Clerk	337	85	4590	5009
Basic Travel Clerk	334	79	3716	4129
Fiscal Accounting	300	71	4590	4961
Financial Management				
Officer	496	127	25190	25813
OccFld 35 Training				
Motor Transport Officer	434	70	9351	9855
Organizational Auto Maint Auto Intermediate	479	75	6485	7039
Maintenance	759	122	11631	12512

TABLE 3A1. --COST OF MARINE CORPS COURSES PER STUDENT (as of January 1990)

Course	Direct	Indirect	StuPay	Total
1	2&3	4	5	6
Motor Transport NCO	360	54	2837	3251
Motor Transport SNCO	499	80	8972	9551
Reserve Auto Mechanic	337	43	874	1254
Res Motor Transport Supervisor	506	57	2672	3235
Motor Vehicle Operator Course	499	548	3570	4617
SemiTrailer Refueler Operator	390	59	3340	3789

Fuel & Elec Systems Comp Vehicle Recovery	1349 342	224 52	3345 4376	4918 4770
Logistics Vehicle Sys Operator	718	678	2332	3728
Logistics Vehicle Sup Maint	344	52	2320	2716
2				
OccFld 40 Training				
ADA Programming	476	3100	3224	6800
ADP Orientation	233	438	2458	3129
Advanced Programming Training	260	265	2418	2943
Assembler Language Code Progr	923	1042	6564	8529
Cobol Programming	958	1368	4723	7049
Computer Operator	476	2387	2320	5183
Data Control Techniques	517	1774	5182	7473
DP Management Seminar	238	438	1612	2288
Data Systems Officer	1547	275	12778	14600
DP Management System Spec	357	2963	2418	5738
FORTRAN Programming Specialist	230	78	2458	2766
MVS Fundamentals and Logic	565	1596	10009	12170
MVS Diagnostics	263	796	2985	4044
MVS Performance and Tuning	165	461	1931	2557
Network Control Specialist	238	64	1612	1914
Small Computer Systems Spec	476	71	3224	3771
Systems Control	238	274	1160	1672
0 711 44 7 ' '				
OccFld 44 Training Legal Services Specialist	41	98	3279	3418
Notereader/Transcriber	31	99	12130	12260
Advanced Legal Services	30	85	1160	1275
Advanced Legal Belvices	30	03	1100	12/5
OccFld 59 Training				
Basic Electronics	1038	483	6463	7984
Radio Fundamentals	1038	483	4474	5360
Radar Fundamentals	1228	172	2320	3720
Technician Theory	1256	547	11516	13319
Aviation Radar Repair Crs (A)	1998	524	8866	11388
Aviation Radio Repair	1114	603	8120	9837
Aviation Radio Technician	474	268	4261	
Aviation Fire Control Rpr	5105	603	8037	13745
Aviation Fire Control	3408	402	9904	13714
Technician				
Aviation Radar Repair (B)	4360	402	4640	9402
Aviation Radar Repair (C)	2750	536	9115	
Aviation Radar Technician (A)	2108	603	11631	14342
Aviation Radar Technician (B)	4957	804	11631	17392
Aviation Radar Technician (C)	4097	804	11631	
Tactical Air Command Central Rpr	4429	804	9363	14596
Tactical Air Command Central	4471	1206	21535	27212
Tech Tac Air Operations Central	2977	804	12015	15796
Rpr				

TABLE 3A1. --COST OF MARINE CORPS COURSES PER STUDENT (as of January 1990)

Course 1	Direct 2&3	Indirect	StuPay 5	Total 6
Tactical Data Comm Central Rpr	2509	919	11435	14863
Tactical Data Comm Central Tech	3554	1287	18426	23267
Ground Computer Technician	5534	804	26602	32940
Tactical Air Command Center Oper	1200	151	1243	2594
Microminiature Component Repair	1143	241	3480	4864
Tac Air Operations Central Tech	5410	1723	33972	41105
OccFld 72 Training				
Air Support Control Officer	3682	381	14121	18184
Air Defense Control Officer	4475	499	18129	23103
Air Control Electronics Operator	2528	254	5220	8002
Air Support Operations Operator	2666	289	3894	6849
Tactical Air Defense Comptroller	2095	219	8015	10329
OccFld 84 Training				
Recruiter	161	360	4315	4836
OccFld 85 Training				
Drill Instructor	22	580	4923	5525
Scout-Sniper	679	10169	8874	19722
Scout-Sniper Instructor	699	5332		10986
Range Officer	580	18128	7364	26072
Primary Marksmanship Instructor	589	2266	1612	4467
High Risk Personnel	580	1036	925	2541
Small Arms Weapons Instructor	580	6345	7215	14140
Miscellaneous				
Instructional Management	66	226	1180	1472

Formal Schools Instructor Field Medical Service Technician	101 26	339 71	4484 2696	4924 2793
Medical Depart Officer Orient	55	149	3304	3508
Summer Mountain Leaders Basic Crs	160	263	5049	5472
Winter Mountain Leaders	161	264	6579	7004
Basic Crs Cold Weather Medicine	156	255	2444	2855
Cold Weather Survival	161 161	264 263	2256 2776	2681 3200
Winter Warfare Planning (Fld Grd)*p864X	101	203	2776	3200
Mountain Survival	165	270	2256	2691
MarCor Security Forces	135	375	4947	5457
Officer CADRE Trainers	161	272	6160	6593
Basic Security Guard	129	313	2623	3065
Security Supervisor	164	311	4955	5430

- 1/ Includes only formal course (i.e.,training funded through
 FYDP Program 8).
- 2/ Excludes student pay and allowances, student travel, and ammunition.
- 3/ Allocated by student load.
- 4/ Support costs are allocated from base costs to training by installation mission population and reallocated to the individual course by academic student load.
- 5/ Student Pay obtained from CMC (FDB-MPMC) as of Jan 1990.
- 6/ Includes MPMC and O&MMC funds only; PMC, including ammunition, is excluded.

NOTE: Training for OccFlds not listed is provided by other Services (see Table 3A3).

OPR: CG, MCCDC (TE-33B), Phone (703) 640-3086, AUTOVON 278-3086

TABLE 547. Then the values that point called for relating reserve letter $^{\rm I}$. Then the values of the called the reserve letter $^{\rm I}$

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- 1/ Data based on the typical 2-week ATD period for notional units at T/O strength, operating independently of other units.
- 2/ Based on average officer rate of \$2183 and average enlisted rate of \$560.
- 3/ Includes travel costs of reserve and active duty personnel assigned to reserve units. Travel costs of reservists ordered to active duty for training are paid from RPMC funds. The rate for officers is \$363 and \$358 for enlisted. Other travel is paid from O&MMCR funds.

Data Source: FY90 Marine Corps Budget Backup material dated Jan 1990.

OPR: CMC (MO-B) Phone (703) 614-1840, AUTOVON 224-1840

TABLE AAR — 1998) OF TRAINING MY OFFICE SERVICE SCHOOLS

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- 1/ A=Army; DMS = Defense Mapping School; F = Air Force; N + Navy
- 2/ Except for pay and allowances of Marine Instructors, none of these costs are borne by the Marine Corps. These costs exclude the following: Student Pay and Allowances, Students PCS, Student TAD, and Marine Corps administrative Detachments. These include a pro rata share of base operations support, training overhead, and other indirect costs. Because each military service's training cost model is different, these costs are not comparable. The cost are in FY89 dollars.
- 3/ FY90 Army course costs were not available at the time of this revision, so costs were escalated from FY88 to FY89 dollars. For FY90 costs, escalate the current costs.
- 4/ DMS does not cost its courses on a per graduate basis. DMS prepares course costs only for input into the Military Articles and Services List (MASL). The DMS cost data in this table are the cost per Foreign Military Sales (FMS) student excluding charges for the information program, food service costs, and costs for shipping retainable instruction materials not applicable to U.S. military students.
- 5/ These courses are funded from the host military services appropriations. The training is provided on a reimbursable basis.

USA - TRAINING AND DOCTRINE COMMAND (TRADOC ATRN-RA);

USA - HEADQUARTERS, AIR TRAINING COMMAND (HQ ATC, ACMS);

DMS - DEFENSE MAPPING SCHOOL (OBS)

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* (AL., LAUNT DRA		79	77	77	70	í.ŏ	474,114	3.3	5105,576	5144,293	52,414
ATOMES PROTOTOTO NO			14	2.7	15	5.0	\$52,705	2.0	405,374	452,092	51.,012
	РИЛ ВЫВ (РИК) ОН ИЗМОЛЛОЇ ВОВЕДЕНИЕ ЛІВЕЧНИЕ В	20 20	54 47	93 17	5°	::	529,554 129,554	2.4	467,933 487,933	440,491 440,491	
AGOST BREWGE ON		12	ä	ä	3	1.5	129,554	2.2	167,933	120,19	
	each "entrement incl-	12	21	7	ņ	1.3	ELF.798	7,4	F94,1961	200 F.M	

TABLE Sec. - COST OF INSTRUCTORS AT MARRIED CORPS SCHOOLS

				• • • •		"					
cp ¹¹	COMPANDATE COL. 72	178 ¹ (2485)	un 2		خبورو محمد	90° 300	900 ⁽⁶)	erci	en ⁵ (51	miai 7	m-13
elt.	CONTRACTOR OF	OPFS.	IIII V	200	LOD	OCE.	orr	34L	. 3-1 C&L	MIL 3061	FEB STLOCAT
						•		-		041	2100141
	Fratrees subject										
H-01112 SHS1C F5	SIENE COLLANDIA DOCUMOR	95	386	286	250	1.4	980,998	17.8	1443,511	7923,903	\$1.852
MOSTIFE BASIC CL		59	100	-700	133	2.0	155,74	a.T	\$166,315	199,462	
	-KUPAT IN HISTORY	- 57	65	er.	47	0,1	2(4,190	2,4	#116,975	#150,975	
HISTORY WATER		34	198	×α	2.5	5.5	1821, 89	97.7	F: ,661,480	\$1,772,674	
MUSTURE SHELL PE		•	175	104	139	Ď.:	150,749	4.T	\$166,535	5794,462	
	pleff Fulless 7 9-camp:	25	w	777	197	1,4	1116,717	71,4	1/29, 917	6790,362	
	COULDNESS OPERATOR	ES	471	751	45"	3.3	\$135,677	78.9	\$770,990	5951,327	
	motive of power programmer	- 23	36	7848	238	1.5	161, 949	77.8	\$443,577	7925,957	
MAGAEES DOMEST S		57	67	38	.3	D.3	92,73	4.4	9110,273	5190,773	
MOCREES OFFICIALITY		164	Ĩ,	~~	7	0.6	37,765	0.0	117,585		\$1,647
	Hallbaret Die 1664		:	i	i	0.0	E6	7.6	110,730	810,044	
	BASIC COPULT CASCACOR	15	42	فيد	43	ŏ.ž	112,700	ž.Ξ	900,450	w. 27	41,525
	LANDING SUPPOST 59751/J 157	- 15	37	37	37	0.2	410,190	7.7	455,434		\$1,77
	A. BOURTMONT RETAREBUM	112	280	201	246	1.5	160,998	17.2	1443,521	5525,700	
H071167 0116 1128		10	- 53	33	- 53	0.2	\$10,000		R5.450	95.48	
MUSTIFE ADDRESS		- 127	10	30	72	0.1	92,594	1.6	915,455	578,438	
	OF REFERENCES HELDERIC		iš	- 3	ii	ŏ.i	W.729	1.7	122,225	520,724	
	CONTRACTOR OF THE PARTY OF THE	ö	iā	ã	ié	ă.i	26,729	2.2	\$55,434	200,127	
	GAPAT DIS DOLLA	55	×	- 25	- 75	11,2	271,241	67	F :	Miles	
	DOMEST ENGINEER NOC	íb.	2	ã	· ·	0.0	92,505	1.5	912,250	5'4,601	
	W4 (3858 - 50)[8558	116	٠.	- 55	Ġ.	0,7	477,109	4,7	±100,315	#15A,462	
MODACTE JOSEPH CA		π.	16	٠,	17	9.1	55, TSJ	1.0	420,977	579,110	
	APA ENCIAPES AUGUSTAL HELD	116	~	- 4	- 33	0.3	2(1.18)	4,2	¥170,8/	#1J7,Y2	
	M BOTHER CAUCHTAL ONC.	105	30	90	- 15	0.2	910,290	2.5	900,440	769,427	
MOSCO72 ATHECTICA		16	îř	ñ	17	0.1	\$4,729	2.5	105,450	Súl, 167	
	MUIPEER MUIPEER CHANNE	40	44	- ü	- 65	ŏ.3	111,370	3.0	400,000		10,105
	DOMENT ENGINEER CPP:CED. REPRESER		11		11	V.1	*2,300	2.7	116,747	510,687	
	ment menting	- 45	ii	- 73	45	0.1	97, 25h	1,6	110,573	622, 911	
	UN ONGOTHE DESCRIPTION OFFICE	103	52	92	52	0.2	110,730	2.5	104,750	564,788	
William Paration	ON SHEELE DECITED WELL	11.3	-	- 12	36	٧.٤	711,374	£	104,100	221,100	P1 , #3L
	Michie Mod School										
MOTO STEEL OF	DICT SERVICE SECRECIAN	37	മാ	845	768	0.0	140	".E	\$293,423	5375,475	4345
mileári meza i da	DHH17:124	7	Жĸ	2'0	796	0.0	30)	0.2	25, 991	ri,641	
MARKET MEDICAL	DELANDARIA GANCES GUIRNAMICH	11	28	_58	36	V.V	P/	0.0	5400	9400	512
	School of Inference										
12 Talla 11 7 F4 84		1:	943	1941	2174	5.1	E111, 416	44.0	\$1,198,595	50,501,969	9675
PRECISA MADICAS		55	484	320	577	1.7	507, 546	20.0	9457,439	5990,583	
RESERVE MARRIED		30	535	709	170	1.2	a51,670	95.0	1176, 579	2000,769	1004
N/1:156 DHTT:886		73	31:	300	290	1.1	128,80	14,0	4349,510	E-06,494	
er fance saxin re	PARTER PRIMARY TO	21	w.	2023	400	1.5	Bar 7, 41°X	A1,0	\$1,622,175	67,000,194	Wed
MESTERN FOR CEC.	auu	53	228	iTI	200	1.1	545, 723	8.0	\$199,775	12%, 215	
ы 7-92» жасын с	MRST COUNTRY (ALL)	25	(AL)	· #13	15 164	0.5	\$1.2%, 371	470.0	FC,491,579	FG, 766, 470	
	PERMITOR ADDRESSES	12			· · · a	0.6	140	4.5	442, 546	\$17,486	

ними и 1955 — коже им пистенствия ил мирово форго из	alkuut s	×
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CIE	Совечуварания. ¹²		MOL ² HITUS	en. ¹ Gest	e∧r≐ Lawa	F, L ² (14% (4)	arc ⁶ ecc	600 600 600	K:L ³ (2) C6L	TSCH ⁹ NO. COST	(Car ^{e)} FEE Stanker
HOPE OF PRACTICAL SER MICHIGAN DAMAGE COME		75 79	194 195	11e 01	72 80	\. \.\$	9106,403 9106,409	17.5 Y5	ध्या, स ध्या, स	\$275,636 \$390,766	52,746 51,77
MOTERS STORE AMERICAN	Count MCO resease; Pr SSIONES CITICEN	-2	245	727	×τ	1.0	e).	W.0	10/4/2019	100,00	11,327
POSSSUA DASTO PODO	lufles meer van sustri 5.400 Briefeur	111 111 111 111 111	40 75 66 21 10	500 15 45 20 20	61- 15 46 57 18	2.2 0.1 0.5 0.7 0.7	4065, 236 65, 956 667, 765 610, 641 76, 950	32.0 0.3 3.6 1,2 0.8	1012,379 24,300 362,399 274,501 312,974	11 (160) (47) 27() (40) 2117 (27) 440,533 27() (17)	8665 51,797
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PORTOCOLOGICA (COMPANIES DE COMPANIES DE COM	monnet Admir School Trock Head Click Head School Calanton for	97 90 53 12 79 12 80 26	25 252 253 432 432 437 544 567	22 20 20 20 20 20 20 20 20 20 20 20 20 2	71 256 212 501 67 19 69 187 6	1,1 1,4 3,6 4,7 3,8 4,1 0,2 0,1 0,4 0,2	12,100 504,879 505,914 545,195 547,656 57,666 512,917 517,767 517,661	1,2 79,6 9,5 79,2 94,3 1,0 3,6 5,5 6,5 3,1	409,700 400,7,9 400,7,93 474,70 407,20 407,20 407,20 517,370 517,370 547,413	457, 151, 2012, 5,4 2012, 717 4072, 917 5410, 710 5410, 513 3110, 503 2141, 503 555, 664	5480 21,172 31,777 5677 6772 51,175 6700 51,477
	occi (arecus, Canta) redarceser costa, cress	^	21	97	45			2.5	219,966	*19,004	£ ,7%

197.0 Med. - COST OF INSTRUCTION ALL ASSESS DISCOVERSIONS

	-2.		-								
_{elu} H	1204-041/50/704 ⁷²				S ANT ^A I : eu	HIL ² (M) (M)	POL [©] (4. OFF	ик ⁷ ру: оч.	*(;; ³⁾ (\$) 24.	6072 9 805 361	2001 ⁽¹⁾ 2008 6000 (1)
Mar esc	C134 100 AIG1										
:	Pritti Increwance - (w)										
HIGHWAYS DRILL DAY	STRUCTOR	22	376	201	767	5 >	7990,555	48.2	\$1,225,847	91,994,286	53,000
M068542 20V 864 0	OFF CARD VOLUME : HESSELDING	11			1	1.1	11, 122	0.2	54,745		27,927
									,		,
	Karula - Falading Regions										
ROOMS ARE BUILDING		27	1223	.444	शक	-	20)	54	37,356,454	91, 546, 624	1736
MOCBOSS FECULET I	RATE has record	- 17	.6%		ಬಾ	:	10	347	49,494,137	26, 694, 177	25,307
	188 4 4 4 4										
	Model Red										
Matter berfånt e	40 B4512	15	HE	145	27	•	\$121,166	16.3	47.4	5957,000	42,445
MB 83	euschen, einen beset Wart.										
	whole wastion										
MENSEL SEED ACK	MEED STRUCKLESS BAR TACKERS	NI)	4-	- >	γ.	1.1	•-	5.7	51754,860	5134,885	17 415
	OFFICEL UNDERSOLD GLOBULES ON .				0.	1.11	F7	(5)	725,347	5224,747	
	3000146 SW1 1 (905 K#77)	25			~	1 11		6.5	8	50	30
METSAGE COCCOME O	PERMIT GREEKET BESTELL WE	744	22	lo-	34	1.0		5.3	5130,860	\$700,000	
K00 2W	ciria									•	
	Escruiter submit										
Magazi des en les	•	24	672	648	751	12.7	\$511,555	75.0	37/256/266	Fg. 448, 135	T3.200
	ni lankustee Staat										
45880E2 880 190			785	711	λ1	1.6		84.0	4858 347	4774	43 -87
		•••		/	~	٠,-	\$155, 5°C	64.0	1818,352	\$778,469	30.100
	WCD Sensol										
ACRES LA BARAGE DE		15	2.86	22%	::5	2.7	\$155,650	19.2	4472 164	9847 1675, 77K	84.80%
			_							,,	4,4-2
	icrusic Preinting segious										
#088008_E0U4011_1	lia. Blas apazie	ьт.	4120%	15.69	aas	v	10	572.6	47,755,997	49,755,997	Self.
PARISO (C	\$42 Ale (45014) (5444) (5414) - 4 2	۰ . 	:								
Commun	Yoscianu-Electron/ox school										
475-91 MHS HUL		- 77	π	ø.	27	6.5	\$20,907	7.0	W75.862	1804,150	54 (84
	ASTONE CONTON OPERATOR	- 77	401	541	100	6.1	F 80.519	19.5	5744,667	1975,109	
	TO PERSON MINICA	**	2002	1700	1251	÷:;	2-22,000	174.5	27, 27W, 177	M.#8.47	
498321 TOURNE		- 65	-73		1-1-	1.3	A/1,000	19.5	7586,245	3591.552	
*252/51 aven. FIR		- 6	964	894	297	7.2	5-17.5 IC	16.17.	\$2,520,007	47,972 177	
	ONT REPORT NAMED IN	- ii	77	20	-77	æ	47,0%	1,1	596,475	PV3.477	
	OIC REDVLS +3882>	53.	210	20	245	5.1	E' ((,34"	42.5	57, 168,551	51,346.576	
									.,		

							_	,		V -1L
		> m1	B11 6	10.3	XXG*	410^{3}	HIL"	w./	P2.4	trik ^y - defi ^{tt}
Emp ⁽¹⁾	(1960/02/51/60). ¹⁷	mars:	ILP -F	0.00	.uu	DHC:	250	(44)	Cal	10. 191
	•					-++	18-6	24.	EFL	COURT SPUBBLE
March 245, 202-00-1	NAMEAUMENTALS (RPE)	54	: IC	236	445	2.5	6°50, ISS	52.5	Egg(: 152)	\$997,190 52,784
	PRESIDE THE PARTY.	3,4	174	126	1.32	5.A	1.33.495	9_9	1245,474	\$566 ₆ 1067 (25,000)
	COMMUNICATION FEB. 45. THE	40			- 7	(4)	44,727	2.4	4/11,073	468,408 49,775
	M- MATTER SET SEE STORY		- 75	75	- 6	0.2	627,665	15.5	MAN JOSE	8142,65° \$5.899
	* 2000 CERTAL REE PORTAL	168	16		1,2	6.7	514,188	5.8	41/77,070	ET ATS COA THE ARTY
MELATT CORE	1.CD FOOD OFFICE PROBLEM	10	÷	73	75	1.7	4/3,790	1_2	EU1,747	577,461 \$1,023
ANNOUNCE BALLING	A PULIE REPORT SUFFEE	1,50	- 1	29	43	C-3	520, 43	7	566,405	#115 16: \$2,800
430-44 #41171	ON THESE CONTROL MERFOR A	77	=1	10	10	0.7	571,023	E.7	#116,174	\$126,199 48.748
STANGET MAILTIN	A CHIS BERATE IE: #4/755:50	56	- >>	20	5.	0.1	67,096	4.8	239,127	2104,271 45,000
AND THE PARTY OF T	G BATCH BEER 4 (C) PA/F25 3C	110	.:	a		0.1	77,349	3.7	992,296	557, 07 KP,245
22WC 1 2 C 48	MINET GHEATCHS OF BUTTON	- 47	÷Ι	27		2,1	\$135,336	4.1	W 11 ,50%	4007,210 55,680
-200 ANI 413 ANI	alland Herriede de CAPER-TOR	Á1.	70	55	:5	1.9	9176, VI	3.5	588, 151	2014,000 25,045
	TRUE COMPROS SPRINGS SECURED	95	56		77	2.5	4145,406	4.1	37.3,376	4254,386 (%,394
	A OFFICE COMP CENTERY LAND	79	2:	19	11-	0.7	540, PA	1.2	212,3900	\$76,799 SA,382
	nate then they W. Titl	1:0	>	7	2	0.0	97,740	7.3	587,755	200 , 740 275, 150
	AND DOUGHBOAT OFFI DIAM AS 701:	- 4	- 0	0.00	44	3.7	\$43,746	1.4	४६२, यस्य	\$100,579 92,576
	VA NO HERT WORT	210	43	:D	30	7.8	205, 7.9	9.9	9240,465	\$291,007 \$0,752
	C4 95 P40 4-40 IN (4) JAC 185 CS	100	75	17	10	1.2	41) M	5.9	\$145,236	61/10,757 48,392
	S dotterfoods (terral (au) core2 make	- 75	27	17	73	4.5	\$29,555	77.3	2/10,697	4512,243 717,151
	F DREWELL STREET BATTER THE		=	9	- 7	2.	47,534	12.9	9322,796	w790,72 i \$26,09 <u>2</u>
	SOUTH CONTRACT CONTRACT	74	27	93	70	3.2	41/07/201	2.4	4169,557	\$457,511 (10.55)
W48483 12:11	er John COMM CONTRACTOR	753	11	- 11	51	Ε.	413,000	4-1	#HID, 145	\$7.5,390,010,490
	Office the second section	100	15		7.2	57	ELL, raf	1_5	432,566	#74,779 1A ₄ 673
	SAAL CONCRECATIONS THE	The	32	20	- 75	6.4	549,665	5.7	4979,622	\$127,486 16.067
#0%5E1 740IF		72	74		3-	0.0	#75,564	6.4	rigo,soc	1712,360 13,989
90925c1 st-210		70	- 4	9.	51	C.5	74.1,A5E	4.7	5101,382	4()1,721 12,627
BELL-WAT 1 PARKS	PARK LEGINOR (CALS.)	67	ID	_	- 0	11.1	56,725	2.3	EV.,681	557,400 56,6%
	TEXANGLERY NAMES	10.	- 11	36	99	1.2	r+7,064	17.5	9337,518	8515,200 45,122
******	THE BUSINESS CORNESS TO THE TANK	86		- 8	- 4	0.0	52,366	1.7	575,212	529,500 00,400
-301101 4-1611	INCOME THE CONTRACTOR	17	·ī	- 1.5	10	0.0	47,347	1.4	المسرورة	\$35,427 55,127
	OR BATHS TECHNICIAN - MAINTE	286	- 4		12	0.4	765,MA	0.5	\$772,266	#157,CML SIGGER
100 CM 18011	THE PROPERTY STATES CHAPMEN IN	75	٥			1,10	557,954	1.1	#)* j#/Z	581,379 W
	TIME CONTRA THEFT SERVE	IB	Ū			2.1	F9,427	0.1	44,495	47,027 50
	CONCE STATION CROSSING	32	79		10	4.4	57,956	2.1	670,105	567,146, 69,218
10000 CCC CCC	Secretary in the company of the 1788-301.	10-				7.0	21,77	9.1	55,250	55,020 4 915
MANAGER I	THE THE AMERICAN PROPERTY.	54	- 7		- 7	3.0	W.386	4.6	5 5,723	917,596 92.70 ⁷
	usiem erechen entationere	- 20	,			7.0	57,737	2.3	797,432	459,300 99,300
	CANTON COMMENT OF ANY P	42	•	47	77		811,413	7.4	\$155,548	THAT, 191 197, 127
MARIN HILPS	M. Ale SEFDESE CONTROLLER	12	15		15		565,114	٠.3	177,967	982,36V *6,1UV
MOTES 18011	COMPANY OF COMPANY AND SALES		1.			7.3	277_97	3.6	\$145,367	#176,252, \$17,594
MARKET INC. N.	E TRANS COLLY BALLOUS	· vér	-		ń		٠,	1,11	50	a) 10
Market Age of	- WAS TON CHIEL BELLX OF	- 55			_	1.7	\$30,425	1,1	20.717	441,572 416,894
	E BOID IS -5 ASSESSED.	73	- 21		25		±10,117	5.7	50,471	\$00,535, \$2,009
	COM PERMANENTAL	1	140		ø		\$83.565	15-0	4339,568	movijant sijolo
WALL TO LEAD	UNINESS STREET	•	d			4. !	48,325	4.8	\$129,094	manjera spejaw
MAILEN T. STATE										

Mary Total Court of Commences of Marine Court Southern

rm.:	mently/scant 17		ko.² Hazir	10. ⁵	W.	ens ens	MIL ⁶ :\$: II-b	(51) (41) (41)	ar.8 re: ~4	SIE SIE SIE	7031 ^{[10} 703. 1718 H 81
*2,0401 1.3	S SUPPORT ALLIES CORRECT			14	ŀ	1,11	20,181	7.5	±17,415	k76,200	65,278
***	geo imper poe las lesticios										
	For common to be all										
9100HC1 F22	power titus	5.0	6.01	174	.51	1, 1	XII-,632	1 11	a7',166	587,570	6724
	Fulrat 1 96	96		192	142	1.	\$7,722	2.3	F57,625	500,367	
	HAIDIBATING GLESS	:00	729	504	779	1.4	\$27 (67)	6.5	61/09,346	2157, 220	
	AL SERVICE SPECIALIST	73	18	127	156	2.1	% .Z:	1.3	ES7.951	749, 210	
# record and		15	1150	1152	1126	2.0	446.879	15.0	5229,618	\$250,797	
	TIC TYPING AND LEGAL AND IN	14					E 1			201	20
	Professional Characteristics	127		:	Ď		53		- 5	10	40
	MAKES LEDAL REDATIONS	14	5	22	Ā	1.8	204.344	41.4	M4,25	2774,417	
	MARCO COMO MARCON	- '-		•			-10,71				
	S was as followers										
41,00312,411		35	27.55	0.25	3029	2.4	P1-11-62	9.7	Dan Julya	20,015,090	6440
	4130-1046-7	Ψ.	775	755	707	1.7	424,617	12	\$870,020	\$075,992	157W
** None *2*		- 7/	710	112	600	1.0	\$76,052	4.5	5777,494	a765, 46	5776
*100000 mil	TITUE: VSSWUTING	35	546	637	48.5	7.8	\$56,-62	5.1	7227,404	65-4,124	CLI F
	ALL AND HELD THE THE CONTROL	(4)	433	776	700	1.5	5200,000	22.7	\$1,205,628	\$1,500,000	
-17 BG2 542	ADITACIAD OSCILATATION	21	-984	MAN	2301	1.5	214 244	4 "	200,107	8111, 441	E:>
*13F967 F04		36	274	272	243	1.4	P#1.177	25.7	5901,889	5687, 712	72,432
	LICAN LINEAR STATE CAPACITY BOOK		19147		:3626	1.5	57,021,772	507.4	\$42,539,604	\$14,557,557	5732
	TOOK SEESTURT	- 6	156	1.5	140	1.4	\$108,159	67.29	7800.00	977,72	46.555
	24, 1542544	51	335	227	342	2.2	5123,475	22.9	5822,670	5550,796	
	Avenuer Ampères en Sarcot										
41018.3 455	OUGH REPRESIDE VENIGUE PERLOPE	- 42		17	15	4. >	all just	73	497,085	\$117,399	57,195
	AULT APPRICATE SCHAFFUL BASIC	62	178	150	146	2.1	\$1.36,593	27.8	7715,973	\$1,740,481	
	OUT I PERMIT CLAR THE SHAW	- 44	41.7	447	447	3.0	4307,2 T	112.4	52,796,851	\$3, (5), 367	
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	nabate des enerte associatif à wellen.	10		75	:7	1.:	40,758	5.0	4!5,255	514,187	4826
	MICID C MARKS	12	74	- 75	74	4.3	44, 171	51	\$20,477	48/7/15	\$776
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 Owest 1 	ar mendinga mendidasa	13	32	172	192	3.7	\$22,036	4.7	F110,116	\$140,174	577.5
FORGE SU	PROC MODATORIA CERSES	177	550	- 6	107	9.2	\$12,460	7.9	471,621	405,735	1.76

FARLE 201.	CLAF OF	24070007286	J.T.	RARING	CORPA	Service:

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elters, auxi		53	12%	.83	157	6.6	45,00	3.2	8792,176	27*1, W	21,539
Ho-In	e Eargy Sec with James - Paritie										
	escha secon, for lawers efficen	'5	15	.4	15	0.1	51,547	7.0	657,74	874,776	31, 121
EDSMAND CARRE	1840 4555	25	15	- 7	45	9.1	67, 735	E-5	574,486	517,440	\$1.245
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Physial Distri		57	===	5.2	22:	7.5	146,792	8.7	2274, 00	2000, 500	21,704

- 2/ Number of students scheduled to attend per year.
- 3/ Number of students expected to graduate based on attrition rates.
- 4/ Average number of students per course (captures training time for attrition).
- 5/ Military manyears required to teach the class (officer).
- 6/ Cost of officer instructors (FY90 composite rate x number of Military manyears (Off) required to teach the class).
- 7/ Military manyears required to teach the class (enlisted).
- 8/ Cost of enlisted instructors (FY90 composite rate x number of Military manyears (Enl) required to teach the class).
- 9/ Total cost of military instructors (officer and enlisted).
- 10/ Total cost of military instructors (officer and enlisted) divided by the average number of students.
- 11/ Course identification Code
- 12/ This column contains the Commands, the Schools located at the Command, and the individual courses which make up each school.

OPR: CG, MCCDC (TE-338), PHONE (703 640-3086, AUTOVON 278-3086

3 - 27

MARINE CORPS COST FACTORS MANUAL

CHAPTER 3

TRAINING

SECTION B: TRAINING AMMUNITION/ORDNANCE

- 3200. INTRODUCTION. The tables in this section provide cost data concerning high-usage training ammunition and ordnance. The data is broken down by organization and weapon system.
- 3201. DATA USAGE. The information in this section can be used in the computation of training costs for the FMF and Marine Corps formal courses. In addition, it can be employed as a

tool for encouraging cost consciousness and conservation of ${\tt material.}$

3-28

TABLE 321. — COST OF LEMMAL CONTINUA ANGUSTOSAS BY TYPE ORGANITYFOLOGISTS OF TAN 1980.

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1657)	Man at the	420 +	1005	4176 231	20	22	
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(515	ICS+* 5 S+X	51,196,17	767	27, 72	31	÷
1287	FLZE C SE	N2.75	497	17,052	82	ž
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P223	5.5544 Ht /Ac	M		77,200	700	200
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857.6	45** # 16	2.0	10.00	F27,4EC	50	ä
55/3	10 744 (# 1071 40.2)	91a7.75	1930	1107,170	411	
24/9	ICSAH III	472.99	-60	2117,121		15
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3-35

MARINE CORPS COST FACTORS MANUAL

CHAPTER 4

LOGISTICS

GENERAL	RAGRAPH 4000	<u>PAGE</u> 4-3
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MARINE CORPS COST FACTORS MANUAL

CHAPTER 4

LOGISTICS

4000. GENERAL

- 1. This chapter provides cost data pertaining to Marine Corps logistic support. The data is presented as follows:
 - A. Equipment Operation and Maintenance (O&M)
 - B. Materiel
 - C. Facilities Construction
 - D. Transportation
- E. Annual Operating and Support (O&S) Costs of Selected Reserve Units
- 2. Data is explained in detail in each section, with each table footnoted with explanations, sources of data, and OPR, as appropriate.

4-3

MARINE CORPS COST FACTORS MANUAL

CHAPTER 4

LOGISTICS

SECTION A: EQUIPMENT OPERATION AND MAINTENANCE (O&M)

4100. <u>INTRODUCTION</u>

- 1. The basic structure of maintenance systems is standardized throughout DoD into three categories of maintenance: organizational maintenance, intermediate maintenance, and depot maintenance. The Marine Corps subdivides this system, to identify particular maintenance work more precisely, as follows: organizational maintenance (first and second echelons), intermediate maintenance (third and fourth echelons), and depot maintenance (fifth echelon).
- 2. Organizational maintenance of equipment is the responsibility of and performed by the using unit. Within this category, first echelon maintenance is performed by the user or operator of the equipment. It includes the proper care, use, operation, cleaning, preservation, lubrication and such adjustments, minor repair, testing, and parts replacement as may be prescribed by pertinent technical publications. Also designated as organizational maintenance, second echelon maintenance is the work performed by specially trained personnel in the user organization. Appropriate publications authorize additional tools and necessary parts, supplies, test equipment, and skilled personnel to perform maintenance at the level beyond the capabilities and facilities of the first echelon. Second echelon maintenance includes visual inspection of equipment, preventive maintenance, diagnosis and replacement of parts and components as authorized by the applicable technical manual, and equipment modifications as approved by CMC.
- 3. Intermediate maintenance (third and fourth echelons) is performed by designated activities in direct support of using organizations. It consists of calibrations and repair/replacement of damaged or unserviceable parts, components, and assemblies, the emergency manufacture of unavailable parts, equipment modifications, and technical assistance to using organizations.
- 4. Depot maintenance (fifth echelon) is performed on items requiring major overhaul or complete rebuild of parts, subassemblies, assemblies, or end items, including the manufacture, modification, testing, and reclamation of parts, as required. Depot maintenance supports lower maintenance categories by providing technical assistance and performing maintenance beyond its responsibility.
- 5. Operating cost data for ground equipment is limited to petroleum, oil, and lubricants (POL) because of the lack of equipment usage information. (Note: cost of POL by type and amount are listed in Table 4B2 [Section B: Materiel]. The NAVMC 1017, TAM, U.S.M.C., section 23, may be referred to for fuel consumption factors).

4101. DATA USE

- 1. O&M costs should be considered in estimating one-time, recurring and life-cycle expenses of owning, operating, and maintaining Marine Corps equipment. One-time factors would be relevant, for example, in estimations of O&M costs associated with special field exercises or troop movements. Recurring expenses normally pertain to estimates associated with continuing O&M expenses such as equipment lubrication. Life-cycle costs include all anticipated O&M expenses, direct and indirect, over the useful life of equipment, as well as research and development and investment expenses.
- 2. Tables 4A1 and 4A2 display cost factors pertaining to organizational and intermediate maintenance (i.e., first through fourth echelons) and depot maintenance (i.e., fifth echelon).
- a. Table 4A1 provides organizational and intermediate maintenance costs as annual expenses per end item, broken out by echelon of maintenance (first through fourth). Expenses include direct labor and direct materiels. Equipment is arranged by TAM number. To determine the TAM number for a given item of equipment, the user should refer to NAVMC 1017, TAM, U.S.M.C. Input for the formulation of Table 4A1 is from the Materiel Information Maintenance Management System (MIMMS). This system was developed as a maintenance system, and as such, collects selected financial data. It is used to support maintenance decisions and to track maintenance materiel and labor consumption costs by weapon system. Therefore, only this small spectrum of operation support cost is available. Many other costs associated with inventory, transportation, facilities, etc., are not included in these costs. Thus, caution is advised in the use of this data.
- b. Table 4A2 gives the average depot maintenance costs and duration of repair for items receiving maintenance at the Depot level. Items are listed by TAM number. Data can be used to estimate costs for items scheduled for depot maintenance.
- 3. Direct costs per flight hour, presented in Tables 4A3A and 4A3B, are provided as expenses of operating and maintaining Marine aircraft by type/model series. Costs are displayed by component and broken out by regular and reserve forces as follows:

Component

- a. Aircraft Operations O&M Component
- b. Engine and Depot Overhaul
- c. Aircraft Procurement, Navy (APN) Replenishment Spares

<u>Forces</u>

- a. Regular Forces FMFLANT
- b. Regular Forces FMFPAC
- c. Reserve Forces
- 4. Commercial vehicle O&M data is provided in Table 4A4. They include operating factors (average miles per year and average miles per gallon) as well as cost factors (materiel and labor, direct and indirect). It is important to note these cost factors are average costs over calendar year 1989. Consequently, because of fluctuating prices in POL, these figures may not accurately reflect current POL costs.

4-7

MASES GAI TACTICAL SQUIPMENS OFFERENCIAS AND NATIONALISE PLANNING FACTORS FISCAL TEAX 1991

edilinee.		SAD BER		397 574	478 574	745-216 BTV	MATER IN COMPUTER TRAIN
	MEAT	KEVA	4044	1544	1244	MC/L	YOM TIPE
in any	144		WEIGH	PB. 4L	F#" #1	HUIL.	ia sawa ia iuffa M
ANADACIAN BE	7051 77-6	2007 1300	COST TIME	COST FIRE	COST FIRE	C261 3.66	THE WAS SHOWN

for a information in eventualise of OKC (Spok LPC 35 , Phone ± 00) ± 95 ± 220 Murroton 225 ± 222 .

TABLE 432.-DEFOR MAINTENANCE COSTS: $({\tt TYPC~ExLimated~Costs})$

r.w	90H:843.4 . 45	MICL	10952 LCE 1.085, 442 DELOC APIRT	##1 -##4 6-4 (1844####)
eau à	and the extra 6/30	•1/0/9:2	2.765	\$170.00
NO.123	4 · · · · · · · · · · · · · · · · · · ·	#4/T/911	95,019	42,170.30
•0055	Aminhier, LIP Toy.	42()	22	R2.30
411.1	enalyses, Spectrum	447 (04-166):		и.π
45799	Collect of Hoseph	ANALYSIA MA	315	619.70
40056	Artista Carry	A67.006.30	64.6	e14 A6
PE257	Ancerta Hook 4-1	V4-577/0EC	26	\$2.4b
916)	rin support Facer Fees Comm Control	467-75-0	3,200	3313.70
40042	District desper	FF /266	54 36	•5.30 •0.30
AX122	Bergeler, Barton Briston, Halpey 2003	26 C AU 1-61		75.70
((152	Cable Leyen, Under Front	487-241-10	61 9,749 136	4425.10
61.175	(a. Lamadian, Transc California (a. Ref Andréa	W > 2 - 1	7.07	r+ +)
A0220 A0225	Ca. Ibrator Co None	A (. a = -1)	ŝi	22.99
4617	Central, Herrage Sarleting		7, 232	\$154.73
Alken	(man) office. Tele	ALOTTE 889991	5 645	4611 7)
70040	Sential Office, Fide	9,0175-59:0:0	F, 735	965 g J
0024E	Concret Car Tele Pale	AK-100-591762	7.17	\$154.23
MOST	Cleaning Oneing, Elections		5.7	92.47
ALC:	Cleaner, it accords		25	55.27
5000	Come Control	54-981-77A	235	No.50
30800	sum (exam)	VONE 1-55	737	HT."
AUX	Cap toward	44/TCC 4/(7)	2.199	\$100.70
A3270	Carr (cm.ra)	14/156-15	:::	R-1
F3.550	cure (ordes), U 1	MODE-11	1,752	\$727,00
AJ388	tion teroral	M4/1/X-55	1,1.7	\$100.10
A3511	Cale Conset, Red	MATTIC ENTY	1.712	F146.50
43512	Eart Central, Group	2-3318) Te-11	150	\$F.50
B1977	tornio, less, Helms era	70128/09/2017	417	979.00
672/0	County provided Sec	M4/Fue 11	1,852	970.70
	Equally measures (8).	*47E 0 J7*	1,602	r: 32,86
6 (4.77)	Serie Communication	M5/7/5-57(M)	9,200	3522. ID
*045	Ferry 1 G GA	#67.29L 60(4)	205	r 7.90
•2533	Europhion Fee 21 82	#67585 T16	63 2,661	#1 (U \$175.50
4.313	sinussian Ednour Sec	AL/A No. 15.	*,18.1 107	a 1.00
*2949	pisty see Negro Par Par Pa	#67486-301 re/heu-100	19,631	*:2(.60
r:127	Electronic Society of	66,774,777	7,031	F4.10
4642	Orrichie, Copyrel	300-42-18092	96	\$1.70
ACCCS MYSE,	n dy wwy Mortering Set Megyenor Morallin di Pa	(C 523 H C)		75.00
41,67%	requests was all the	80-1170/0	3:	72.20
20.752	George Control	447,541400		25, 83
7572.5	General: Spuel	747-24 434	76	(4.0)
20172	Gazart, Ser. Frami	Abjust 366	ä	45 53
AU777	concrete, Signa	64-258-9	100	54.10
70CES	Generator, Since	14) 654 525	3	,6 6)
4647	Y mana, Mabille Force (b. Ton 196.	(A) 160 - Vigoriti	2,378	95:2.47
AR1:	2 100 6 1 (N) PC		1,040	473 (43
200.15	Shound, Adollio Force Su. Turnish	79(-18) FS	4,537	well a)
30845	4-Hipper Highling Sal	•	71	PA 17
A0045	July, And Ada Lette		14,617	\$2,430 02
30000	Intercase fact to done	A4/736-55U	1,90	\$65.7 5
30543	Literator Feel day, Light	340101-137	1,54	9/1/27
Adobi	Laptera Chr., at 1862			\$10.10
30,000	dalmeranes (c)	HONES OF	571	457 51

TABLE (A3.-DEPOT MAINTENANCE COSTS) [FY90 Estimated Costs]

14.	ESPORE, MILES	esan.	NOTES SEE LIBER NOT DOUGH HAT AL	ANS COST BEF ITENÇATOR: S
80518	Non-Carance F. C., Efections:	*C13441L	54	\$220
AC5 15	Marie League Control Control Control	AL CONFIRM OF	1.7	\$T.12
W415	References on Classification	FL - 70(yFEC-72	FS	£* ,?)
(0.47)	proceeding to the statute	4-4/6	6.545	F20k .50
ACSE:	Moculator, belan		15	\$2.80
YIETZ	Mulicineber, Orghida.	*4.012H 241	75	\$2.5.
61112	deff and a	##/1 87m	1,721	\$V2.00
A1295 A1255	[secr Supp.)	FT 7353 84-11	54 85	\$2.32 \$6.4.
A1177	Four Rapply Halley Address on	#4.00U-10	- 5	B . 37
Alles			A 135	472.0
X1252	Pager, Course of receiving Contract Pager, Course Of receiving Contract	1/090 27	6.325	\$300.7
71192	No. of a Min of del	44.156-1	2.734	4782.77
A1157	B. J. S. C. 1990 75	11.765-41	1 209	\$42.50
41472	Fenny 5/1 (195%)	#44fff 150702		111.20
#1453	Bacar Ser. Firefinder	•47He-35	11.555	1.01 4:
44.0	Book Ad	44/10/4/201	E 253	1612.90
41677	Pr. 25 & 0	M47/TPS (42)	17,480	W#5.70
41507	Facer Sec Lout, Air Trantic	•4/TP5 25	15 257	4774 43
A4513	Bartin (200 - 17g disprige)	44.03.54	(4.34)	F +7
41927	Pr. or Sc. Paper Sci	947UFC 13 947UFS 10	4,543	\$207.43 \$207.40
A152)	keen sig of nataro	44.IBK-172	4,555 72	W 77
41222	Prior No. Stl	A1-101 15	. 63	113.55
• 15:2	bacter Cm. Fec, Hoblis	11.04.1	2, 2,7	2116 21
# 1553	Mac's removed	10 187-13	2,000	Mr. SJ
479) (Maria Principles Communication	M-097-C)	4,700	\$678.50
41/37	Page a Indoppedance Researing Sab	44-TFF 14		•5.00
# 171 X	Applic Incenterance resouring ear	440 Hee-171		• • • • • • • • • • • • • • • • • • • •
#17 G	Rastin Records	44/168-17	- 30	75.70
41778	Providence was produced	AN-PER CO	:6	\$10.50
#17°4	Best a Becar vina Sen	44/164-701/jv	<u>245</u>	#21.30
4170s #1870	Macing Soci Macing Soci	A4-GFC 793	:WF	\$10.79
•15.2	Recharges	14000(-15%) A4600 150	222	515,50 e3,60
41250	euclo per	74-PM 1)	;;	55.90
*17.50	Team to	A4-MC 110	9:	•5.70
*1328	Recta Sec	A4960 (3)	25	e11.10
4.250	44310-200	14/14/1-4-21/94	55%	727.86
61,050	Redical Succ	74-ME . S.	124	\$2,20
47320	Redio Sec	Asymbol 47	06	F41,00
42.600	4 alo 201	6401.001.000	**	Foliab
N2365	Redio Sch	WANTED TO:	61	45.70
42390	Redio Sec. (2 (ferral)	A47786-976	, ci . 1,284	P1" J,41,
42301	Autin Fre 20 thread	ALC: NO.	1,120	7774.15
62130	fadro foc	ALARE 12	<u>'ā</u>	\$2.77
42150 42101	cedia Sec Cedio Tor	76/982567 44/2325044	21 257	20,91 VG. ID
12.12	Radio Ten Ima. Set	A47-80-134	210	43.3
12.02	Redlo Ter-'na. Scc	AL (#42-125	íñ	E-0,43
0.00	Zelio de los Sel	4471371166	2:7	F18.60
42.40	Reviewing Sell, February	AL/288 17	142	43.7.
12200	recorded, proprietable	74,7444-4	:#	93.EC
15207	Square, at Set, Borns	64/070121	IET	56.22
A779E	Repeater, Pegeraranity	Mai 2551-(1.3	110	47.1.

TRUBE 4R2.-LEPOT MAINTENANCE COSTS¹ [FV90 Escimated Costs]

TAN	HIBELT, VIIDE	leat.	AND DEAD BY AND LEADING	MC 5181 DA
42720		AMPCAN SO	211	412.00
42560	Sign, Electronic	Merchanists.	236 254 2,24 2,22 2,22	F14.20
42300	Sipp. Electronic	(M) I Be-M		W 2.56
P. 2200	Riop, Electronia Supplications of Colorad	30046- 33	2,220	P* 50,40
425-80	Sign, Earth and Adult-Coll	AND AND AND	202 1,064 5,714	F15.20 955.70
42592 47597	Store, North Co. 1 4d	AND REPARENT	/ 201	#225.20
* (A.)*	Frontition to the	200 1770	21.73	62.60
457.0	Stram. Not 1 for 1 felt Stram. Not 1 for 1 felt Stratistics 1 felt be 22. Stratistics 1 felt be 22. Strategy Despetation Bloom 2 feltbern, Telephone Bloom 5 feltbern, Telephone Bloom 5 feltbern, Telephone 5 feltbern, Telephone 1 feltbern 3 felt benegation 1 feltbern 3 felt benegation 1 feltbern 3 felt benegation 1 feltbern 3 felt benegation 1 feltbern 5 feltber	94-31671 (c-324)	224	- 5.40
67190	rothogra Talencam Humani	90 8677	6	r=.40
*22.22	to fellow a teneral a territory	89 2007(#55) CT	392	525.00
6753!	Sarbehbeart, Taie Wills autrobling San, Heesags to ticos a't up teorral Tablecal July Some Cotto. Talango Fo.'o Popo's Fac	55-2616-70-00	300	e25.40
•273n	armhing Sec, Hereage	A4/WE 7	1,850	#1/J.W
42751	Continue with up theory	44/792-7	F,310	5512.70
425%)	Technol July Come Dort o.	44/175-74 44/256/7 44/21-74 44/34-76	5,301	205.20
4347	Nilempo Paulo Popadri Ped	44708940	578	
4256J		44)-21-74		27.92
40254	Tallabapeer Itan Sto	64,76,4 - ⁷ 6	- 177	e3 (1)
*e570	Enabyse for 900 enabyse for 900 enabyse for 900 Earlighte for 50 Earlighte forder. est term 6 enforce.	64/166 (54/7) 64/104-74(7)	£	(5.4)
P2157	Takin'i georgi syon, Syy		257 233	275.70
475TP	Telleprome Terrifice.	M4100-12	3,7,5	M61 ()
4547	Telephone Tenning, continuos e colonidad Tennisti Tenning Prop Tennisti Tenning Prop Tenning Personal For	MANAGE ICA	56 54 m 1,72 1,63 6 5	\$153.17
42727	Temp Sala Caraching From	44/34-5/4	<u>::</u>	25.52
47,733	fact Ber, Cettorestor	87 68/4.8 99: 836-3		
44117	Sylve, in made cresult Team Sylve, Eventhering Treasi	44/16H-17	775 177	31(.1)
42573 42573	Tana San Sana Makand	#1/93# 423	11.	M11 57
ACT 12	Total But No. or	44.APH-1574	11.7	\$6.77
J2552	Syl, E. I made contact. Tags Syl, EHomer Times Lare San, Except 11 board The Syl, Board	#47 BW-77	775 125 125 127 149 140 140 150 250	53.75
A2717	7040 501	8-17200 44	177	\$10.22
42747	Teat Sel. For -	-1 mm m. 12	113	56.73
/3=53	Teat Set, Fed of Lock Col., Lock Probability Teat Sept. Fig. Col. Probability Doc. of r., Flat Coulp	#\$414M*1*	15	111 4:
423.53	test, est, towarynessions	PA722H 21	77	16.17
A2677	leat Syp. Fig Col /ear ely	ACCUM-A	523	
47455	hor sir, fies Caulp	FRC 360 E*	553 112 50 77 5.675 10 97	40.5
A2 157	Treater Governer	E-17	61	52.52
77453	Tryffer (Ab.e, Rad & Fote	E 47		34.7
42 y Ja	translater	WITH SE	2.272	V38.75
12244	Transporter Set, Dear Simi	APS MISSON	11	\$6.75
HCC7.	kir paralalerar	PER INJA LES	22	ψ.,3: \$2.10
EU EX	Am Completioner, HCS Servical	4/2 791-17 4/4 531-14		\$2.50
ECECN ECU: 5		4/2 58/ Ex		E5
ECEC:-	· · · · · · · · · · · · · · · · · · ·	W- 35:-25		\$0.00
NCC74	Air Caral Horer	4.5 (15.5)	7.7	#3.F:
E1179	Gir T. million F	4/0 380 27	÷	\$3.57
FEECS	Fact Jord. True 41d	F1 -98-04	150	\$10.70
11774	gje familiert Beth John, Trun 41d Bohn, Arlike Frencion	4/0 330/21 4/0 330/21 4/0 330/03 61-93/64 11 1270	15 93 59 52 62 64 15 15 15 17	#21.50
EF 157	Enform. Truck Hitselma	Fi 4	11,263	M10.90
HC INA	Enloye, Truck Howline Rollege, Theo engineer Type		10,415	4967.20
EX.157	Francis Long. Co. 1107		527	1,36,60
60 179	Pro hear / Clarechall	F05 055±€	11 21	\$1.97
EL21L	popularity Herritians, human		21	T1.64
EU219	Countrie, David Arteria		GF.	13.T
ы,26а	Querrector, borronous		75	47,60

TABLE 4A2.-DEPOT MATHEMENICS COSTS¹ {PY90 Estimated Conts;

14*	PP-040TMPE	479°.	Will acted Movil His 48 Met 1/847	6/T 2051 QEF 116+(3030)
H11177	Compressor, Air 252	sepirat	791 120	119.20 213.80
BULAL		100	703	+15.70
D0252 H0795	Compressor, Air Wolfe V Compressor, Air Motary pt/201	2170455	: iii	78,19
0000		DEXT 2533	. 1.1	\$77.70
22500	Counc. Espaton, Especially		400	862.77
40:10	ciane, Erseler Non	n	72.	534.10
1,435		4315	60)	557.53
42770	Crame, 5 for	Skilet	94/	#53 V)
40585		50 ³⁰⁰ -64	725 1,745	922.27
12466	Structure of a representing Pliets	F12161		#41.55 #1.75
90145	Separtement on Apart 2005		142 227	507.53
9 1480 8:990	niu Haner, Siminessa 1911, Encoarie		327	\$7(.5)
E.7990 E2579			10	86.72
F2123	Figure Set	125 ·	185	\$10.00
BC=2-2	Floodilght Set Ford (1 4.7,70=20 Foretrill 1,700 lbs. Foretrill 1,700 lbs.	F. 5.AIC	93	25 61
6000	Teretite 10.720 lbs.		152	41.5r
81.97"	erricence Conventor IECa		761	\$10,000
601/2	Fired, many bases for MCCV.	F. 712	255	#I3.94
F(475	Crecusary Coresidan Shek	(4-5251/0	155	10.65
10574	are percy Concerns, 55, 19804		(11	45.00
60675	Time Organisms Sec. 1 of Ni Tirks	14522	1,245	92.4
MERT	Page Mye, Amphie Arrawate, 500,000 Gal	P9/80	1,225 7,211 122	2520,75
00871	Quarter Sc. 15 au		155	to.mi po. n
60421 60651	Germanister Sec. 110, 2004/ IMMORRATE Sec. 500, 2012	MET-COM	101	13.30
60671 60871	Construct to the Section 2012	PC1 7.61	775	29.50
61616	Garanteer Set 500%		122	F8.00
E1671	Omoreson Sec	MET 11 194	20	\$12.50
DIAS		HFP 0274	462	*25 ±)
81050	Aurenter Sei	Hgt -(1, 55	513	527.67
21080		580 Pcc	6.3	405-60
31081	Shadon, March March 1991		912	445.21
4,155	Hallicoptur Expedit-1 February Sec.		339	920,93 (8,5)
er ha	The screen Planc	4:33	57 02	22.53
51160 21220	rio mility Hechina vit, eccentr, Treckum	TAN 1525	29	27.73
91225	Leundry Lette, Trus rittl	4.5%	177	125.27
51200	Jahrenigen Reproduction Pas		272	\$40.00
4.212	Pareline Set, Topos () iii.		: V2"	9341.40
41325	4) out, Epromato Natio Mile.	194-26	173	\$10.57
11460	tilly feisor		925	\$47.5°
977.665	Annumatic Fool Duty N		107	W2.C
750	-,,	4.16	31	\$5.50
31596	Page, Recordanting			\$ 2.6.
41466		* *-0-ad	23	\$1.60 43.00
\$1880	#26-1,9-0. Holt 1/250 carts 827	170,70.2	;;	92.21
4.490 81730	Befrigeredor, Proteo (100 cm) sefrigeredor, Preiso, 850 cm).		15	\$1.00
1178	Patroductor Dania		1.272	\$6.00
#177°		62-90H	245	F3.10
21782	Feller, Juan	if the stay	75;	\$19. IF
h 17.95	Saller, Teras		1.162	881.00
\$1/47	Faller, Incorpolis	k 165	255	¥19.70

These err.-entroy enteremnes cosp(1) (FY90 Febinated Costs)

1/"	ADPT #11/Minus	MATEL	MAC FERTY HARLY HOURS FER LITTER	AVS COST FER STRHESOFT) ³
81/75	Roller, Townd	M - 21 3	.10	55.10
6 1533	Seller, Towerl	K-17-26	170	45.20
E154)	Rea, Radio, Decrare	W W 15 2	151	58,90
B1257	See, Redia, Commerce Baraca (Abar		TG	les. 40
64422	Regulation of the Control	F25/6 3	504	rā1.50
11133 11925	Service, Carte oving, Count	PL83	:19	725.00
11950	Songper Blogg English Combag , Print	PPS 1053871 PARCAZIT	:M 116	651.30
1742	Stac Equip, Carer	P47-321	116	P17.10 47.70
179.3	Engo Equip, Canon		1112	20.00
4.983	Tran befrif. Jane!		154	99.00
71926	Stop Equity, Copinsor		izz	433.72
9,300	anap Emplis, etc. 1, ort. High		177	\$22.9E
42004	Erial Proctous Was als	24 VID	744	140.22
52112	Survey Set, Amilerr		72/	\$1770
62110 62119	Barrow Bally Topographic		21>	R8.50
62119	Survey Sourp Con, Conet Seesper, Industrial		2,277	\$155.13
62477	PUCYCH 501, Problemate		.3.	4 v.))
62125	Tottical into Chagany Arctaux		2,986	\$7.03 \$101.50
F2175	Several (Inter-)		6,7400 MO	TS-77
k241:	7-44, Farme, Estimpathic 5,000 dat		463	\$47.50
55853	Tractor, Had Full Tracks:	\$2-3: re-es	/22	Q3. ()
68455	Rectary to Franks	MC 1153	032	566.65
62494	Treeton, Distriky		746	\$77.50
22457	Treeton, Fubber [1/4d	52-37 99 5	76	61.49
62157 86353	Interac, kill consted	PE5520	205	127.10
12400	Tractor, Booter Tires' Tractor Weel of	*4a 100	4.6	\$27.30
22345	Truck, engli ()	45) 40 A300	1,167	562.80
92900	estar Electrication Coulp		267	F>(.70 \$29.5)
10010	ester Clat Coulp Syn	*-80	175	¥?U.21
12520	water burfel battien unt, ein 229	.2300	11	22.0
03050	Carrier, 19-gr	41.1961	174	45.57
100755	or there games	4733	244	560.40
00060	Sheep In , Chin	45%	1,057	£56,5c
00096 00140	Sharer, the property	MAT I	19	54.23
DUIZE	Dolla Cite, Convertat 61 Dolla Frie, Convertat 61	HIOTAL KIMBAT	45	53.53
20100	Official and Service on L	MI*DAI	ů,	71.17
00212	Sent Criry Security	Heav.	776	\$15.53 4 42.43
CC553	Sent Cric, CC	N/34	101	W 7.42
E(71)	Scaliffer, Lew 3od	HITE	436	475.40
CC247	Serr Frir, Iru Awi	P670	405	728,300
:077)	Report of the Server	Motol	187	6-0.30
21,500	Bolynijala, Steep	4127 <i>8</i> 57	253	h:0,5(
30270	serieffer, so of Prote Super-	1753	cét	E*2.7€
71280 93 23 5	So intra, full Smillion, secondar	• 3 AAY	722	\$0.00
03220	Meritary, was related	45°3	55.	E30.4E
p)600	Sprintling Ven, Serrigerador	494062	377 775	122.00
DISID	Amon Seri, Seriaminant on Basin	· · January	728	#15.20 940.20
60726	Sup Set, Automotive Cus, and Alex		275	116 6:
D0334	Shop, F4 Auto Cust, and E. C.	иточы	779	\$15.52
00240	Stop Set, July Fuel & Cles Bys		122	422.33
	•			

TABLE 432.-DEFOT MAINTENANCE COSTS¹ [9790 Estimated costs]

•	6.4745 J1.6F	151	ME SOME THE	ORANGOS PER
FE223	Shop Ser, Fe muro Supo Ho. I		472	\$25,76
u 70	otaz war, re sum organizació		',11.	6 5,61
F1447	States, Sec. 15 color flats		545	F1.10
10853 2186)	Trin, Cargo S/1 Ton	V17A1	31	\$2.10
71,767	Title, Grame 1 174 ton Title, Names maker	5 1445 5 1446	25	12.1 17.1
1000	Tele, 101.3-y 1.157	125	775	\$30.00
(49.0)	(1. /pla), (1.) - 16 hai	5710M	£2.	FF.B.
755.>	I-t ' I	-250	NE 65 67 87 87	415.30
11623	Tet, Artenverse 1 Inc. Sol.	•777	95 187 87	40.10
216.7	111, 20 to 2 1001 ask	599)	12.	pv. cc
01527 (faf)	Tit, Zango 1 1/41 pod s/Hinsh	*55" *775%:		\$4.40
7731)	it, bign	*9942	427	72.4.10 96.20
11353	Trit, Cargo & Familios	-51,626	cés	\$26.50
:1:5)	te, large 5 fee out	*77\ ²	41;	\$18.46
71752	Try, Chat, Printing Species	-1730	1.555	164.50
11396	Trk, Chept, Frime who Resource	-5 %	1.57	\$76.07
;1E)7	11, 3.381	M/32 F-48	277	32.137
717/0	Trk, Dump a For	-51A2	=27	475,500
(441) 2610)	re, -limits oring, than	*: Y-1 *553c#	17: #65	48.44
21355	Tre, Time"greing, Serverum.		5=5	\$16.57 \$37.60
2135	Try, recognized but the	•360	4 979	±107 x:
717.6	Tit. Or. Ser- Armir't	4476-855	25:	\$12.00
211.00	Tro, On. Service Court Tro, Pumpford VIII. by 1921	44/6 F55 -27/42	-25	40.00
:1" ()	ns, tank elekt	#1900g	4/2	4cc.1"
711.30	Tray Turk, apter 1977 half	45,000	15]	924,40
31.50	Trk, inventor 5 landers, inventor	#72/2 #120/h	1114	\$*(*: \$2.3
27743	Tis, Trever	41.503	1,233	\$40.50
6.70	Tre, Ibil Sty 196 Ser	41007	1,233	46.6.
21190	True Way 2 1721	419862		90.2.50
7, 5, 0	Trk, Wrector 51	45/342	1, ***	5/1.50
e2 70	at histope \$7-209s	4>	1, ³⁵ ,	3 · ·
- 1165	Education (State State	44(104-111	411	24.0
77,99	Forger Bullion (TV) February 21 Sector 51 (48)	**************************************	165 1,736	M(1, 1) M(1, 1)
737/00		Ms 50000011	1,120	31 1
:000	Zaprasson, Posiper aliqu	H1	,	12.12
1120	Computer, Sun Elirace an	MIů	×Ã	5 15. 50
.0271	control Box, Ok Februar	A4/04 52		57.13
0.94	Control Feel St., CR Calledy Guided efective. Transing	A-0150-9	5,165 219	\$152.43
13560	aulded efectile. Transing	HIRCON	5.0	5 17. 53
2,022	Assistant (1. Investory) Apprilate deal (25. 57	MIGNAT	5, 217	921.73 922.73
3500	dustace and	HIST.	1,343	1331.73
.uh	desires etal	HIINA.	2.70	R24.10
D846	Apeltoan S In Heavy SP	HIIGES	2,797	51=2.13
- WAT	urphoses, Allehood Jame Room	Aughbur	2. 11"	215 (1)
63.00	Information Coor Centry.	A-JMST 95	5,170	5 lest 27
F-17707	INDUSTRIAL DATE OF THE		:7>	217.57
D) (2)	Interceptor Sec. 117	(A)**** 48	155	2.2
DIG:	imerrogetar Set, Progresser Intercontar Iff	Alyese 1 Alyese 2	181 118	51.93 44.90
DO-E7	m.x1123167 - 111	W/1 (13	1.0	٦.77

TABLE 482.-03FOT KAINTEMANUE coses³ (FY90 Estimated costs)

1/28	4389CL**LK	MOTEL	893 00807 HARE 40088 664 11-065	970 (000 got) (1.0009000)*
2,47%	Assume smolliger, their term		2,888	\$105.60
23666	Access to anishing they wante	200 - 7 No. 1 No.	2,619	\$415.00
70057	rediger egyptick. Ontolesser	A11 - 5 PASS - 40		F733.60
-6025	Journ't Cab	MF5fel.	200	524.90
0/941 0/945	AMERICAN, ARTO LONGING PRACT	201 162 1	',111	977.00
EUSOE	mader transporter, GR Machine Sun, ca. 50	>+5(1 ₂ 5	727	part, etc.
60925	Hatina Gan, call (c)	IEC		\$1.77
E 1745	Marrier Guil, 200 SO	NE5	1*	\$1.40
51252	Heteorolyka érantmentes et Heteorologia et atingepor, al	65/040// 85/044/7	247	439.61
F4253	King of Househard Stee	65/191/27s	. 47	41, 1:
P1:22	her earling See, Guides of com-	*5/794-215	1,453	511.37
E1222	harden, in'	-75A		434.20
£11.31	Main Main Common Codes	164	<i>D</i>	47.51 85.70
. 1 23	5 art 1 mbar, have, 585406	847178-5	555	#15.73
500.64	Vani Tombur, Inter, Seade Vani Vision alghor, Sa	MAZEZE A	\$7.5	E(E.*)
\$1136	ergas Vieren eighte er lei eige Vigar Umen eighte en auch	A4-T/3 5	7)2	35.33
51150	Afgar Circan digital subsets	A4-P-3 N		27.11
27.12	a del bio en local france	140 (1970)	-::	57.40
21160	Commonley cond Thinkerse, 90 Planes, Call /5 Reduction gord	A4-15- 78	7,857	4757.00
11165	Writecus, 90	MoŠ		52.40
11180	21:10., Cal /5	HITH!		22.53
71211	AND REPORT	78 y 8+0+1)	1,875 5,574	etia ni
> 1111	11 MM 20 C XXX 1	447973146	5,574	7235,40
E 12 15	Redor Sec 20 1	MEN-12 (2.7)	2.76	2213.16
C = !	Pader ser only	champa (1)	2,645	a > .50
1 1177	Audiopolae Especias Chart Ser		- 4	#5.5L
61924 51927	Rudiceonde Apecincen	497749-50	66	₩.50
C 1542	Pargetindos, 1969, ligiturija, Papir Sar	46/361/5	1c:	19.00
F 1554		de dudEn le gen⊒γ	90a 170	\$20.70
179/3	Recording to 1, 2004-10 Recording Valuation (1 Light Recording to the state of the	*2/5	1 (24	\$0.10
C 1577	Monthly Manuals of App	##Dy.	4,017	F18C .20
¥1550		••	4,227	±215.25
01500	A (17, 5.50) (Sapre-es) Boss, Equit, 20 November Company	64752	-	W.55
- 942	Stop. Egu c. Person at 1 o	M4/TON 125	1, 5>F 1, 5+F	871) (9185.52
27.644	State, East /, eremon Tipling.	14-75- 127	1,47	\$160.77
2,000	Army his in Power Care to	M-124 A	1,72	31(1.2)
7 WB	Seep. Co. p. Femone Linero	90155 127	1,00	780.50
21649	Step. Douge, Remote Control Group, Found, Armen's Control	A (15- 11)	168	25.79
1.1761	Klamini i Sločike, Radan Srghal	78 / 192-25	7./20	ežej, Ju
F1655	Lag Concel	HAU 4".	5,000	*290.46
LING	Test Facility agene	JB 271.8 77	2,326	51.75.76
FISCE	Torri Kirl, 1848/24	Ht-1575/104	',222	k) /(
F1612	Transfel	4475961A	151	\$6.44
E1512	Table Safe Sile / 1956		1.025	\$113.40
645 T	Tese Sel, Du cas Miseles Tese Bel, La Sylvan, 194994	4573 90:115	425	FEC.2L
61930 61930	est ent. Le system, CSLSSA	AVA 94-124	2.545	\$120,60
51,747	Teat Son. Gurond Micrilla Story	#C/F9H SE	12)	\$4.40
52-65	Test bit, elembling	■1/T/M C	341	\$16.50
7370	d to	as Leon y	254	\$17.51
-4.80	Tool Sev. Cobles:	45 T R21 /	13	27.45
25100	Tool Sec	40°5 400 1	;'	4
3016	1901 617	Calle Berl	į.	51-53 27-71
			90	21.11

4-15

- $1/\,$ Only those items with an average cost per item of \$1,000 or more are listed.
- 2/ Estimated, based on historical data and projected on basis of acquisition costs. Represents the average time needed to repair those items that enter depot maintenance in a given year.
- 3/ Derived by applying an inflation factor of 3.2 percent.

OPR: CG I&L (LPR3), Phone (703) 696-1059, AUTOVON 226-1059

CARLS ABAB. - DIRECT COSTS FER PLICET HOUSE RECULEM PORCES 17550 BOUGET DOLCHHOL

		,	מי זאס	1005			ייסו בי.	r. (9 MII	L 745	
98107	F50.44	p	E1 8	₩.	IOTEL	:LEL	Lef	17409	-274.	CCESTES LOSTS CCESTES LOSTS
UK.The.						-				
Ar 56 ;	25, 311	· +÷	745		:612	70,254	15,831	12,174	27,297	17,259
N-700	10, 947	533	1175	GT:	2311	4.17		1.588	24.125	23.37
711444	24,7.9		۴.	764	1056	2,797	2.900	1,475	25 M)	1 895
01530	2,713	55.	355	517	1752	2.345	9,412	2,383	10.00	11 '34
54-57 6	5,379	100	654	384	1371	0.651	4,430	2,080	7.577	215.2
25-10v (7,300		115	715	472	0.172	3,374	2.774	C_F25 ;	7.2-3
C7:10f	2,504	79	747	1F7	511	4.436	3.765	2,777	1.777	1 335
<2-1300 S	1,125	475	477	360	1320	2.271	2.215	1.44	=-'>'	12.477
C1130# 1	1.00	j 1-	200	77.4	112-	.451	4.000	2.5 5	2,759	5519
41 11	4,327	. 5	424	361	875	0.253	1,000	1,386	7.436	2.032
44-1u	5, 149	i «	475	321	017	1.750	·. 	1.333	2.17	5-177
-1:14	7.50	j ;;	747	de.	0.7	4,411	1,008	1 902	• 20% j	2 500
F4 184.	25, 427	ذخت ا	9.7	3/8	1924	17,000	19,157	2.900	47,725	45.576
24.00	1,22	5/2	1559	574	225	3.592	5,601	5.732	15-777	22./5/
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						-1.11111		:	1
·H-F4:										
series .	15, 107		- 37 -	44=	7201	a.46-	7./56	7.49	73.2% (17,449
• щ	1,533		2/9	22,	066	0.541	3,600	2,364	1.945	15.577
B-78	5, 455	500	775	500	1007	3.307	1.344	2,020	tunën i	27, 709
74-245	72,407	27	555	76.	'011	2,650	19,746	12 (89)	0.73	3.457
14:5X	2,290	295	1127	560	.063	2.067	19,40	4.874	17.995	5. 992
14.5%	12, 22.	11/2	575	257	****	.96	2.959	2.2.5	20, 253	5, 353
74-536	3, 151	115	1557		277	0.647	5.0%	5.309	14.77	5 755
Der 204	3,74)	i 75	155	22	51.1),166	1,50%	: 203	5.775	7 :::
	2,22	! ;;	279	22	768	9.212	.30	2.900	2.33)	245
65/100	1,440	1 457	57-	175	747	3.666	70	7.70	4.50	4F.(2)
C 194	2,279	447	2/5	361	1046	2.625	1.600	. 460	2.292	17.567
M-19 1	15, 828		•72	313	061	0.774	3.7%	5 407	12) 3	6 134
AT 10		%		2/2	W.	1,100	0.001	2 641	522	1,910
TA IEE	2,454		257	492	1488	.550	3.942	. 00	5.22	25. 52"
	4. (55	65	577	:007	9.551	7.020	7.712		25.32 27.3%
en-line (10,500		133	575	200	0.331	4.00	2 000	75.610	27.76
PB-138,	19, 447									
77 4D :	2,000	521	5/7	**	18/1	<.25e	1,64	1,200	5.22	72.50

- 1/ Data covers TACAIR and Land forces aircraft in the Regular Establishment. All costs are navy-funded and include POL, depot level reparables; intermediate and organizational level maintenance; and squadron supplies.
- 2/ Fuel consumption is in 42 gallon barrels per hour (BBL).

Data Source: OP-20 Flying Hour Program Budget (Feb 90)

OPR: CMC (APP-41), Phone (703) 614-2189, AUTOVON 224-2189

PABLE 4A3B. - DIRECT COSTS PER FLIGHT HOURS DESCRIVE BORGES (FYSO BODGET DOLLNES)

			3KI 1-4	41L		*****	5 (3D)	4 411	1 :44	
5031E6	A-4171 R045	·m	D.F	H-1	IOIAL	-ruer	16,6	145	\$ No.	hart antiere)
FESCRATS										į
6-45	2,684	607	745	275	MOT	:. 7 2	7.63	7.385	46.5%	15.759
4.50	12,512 !	215	767	260	1962	1.046	متاذرا	5.542	192197	12.466
18-175	7,547 :	51	175	'20	710	3.179	1.5%	2.77.7	F.755	7 255
NC 7697	A\$1 -	477	0.5	48.5		1 4 4	1 545	7 366	1 194	1. ***
EC 1531		422	122	145	645	2.191	1.313	2.735	4.243	17.52"
19'-124	7,750	22		301	jξĄ	3.290	1.000	1.15)	1_523	2.577
74-55	2,71	77	467	196	670	3.760	3.9%	5,489	1.=>>	1. 179
73 13	3,665	52	145	201	***	7,156	1,003	2.15	1.67>	5.21.
Ut-14	5,144		141	172	77.7	1.254	1.7%	2,325	127	1 1 570
CI NEC	4.217	- 51	-15	2.0	Att no	1,984	1,550	7 327	2.75	1 4 522
(1.99%	4,462	12.0	3.15		1146	1.400	- 000	5 90	4 7 4	- 117
Cardh	1.21	÷ 1 =	512	282	1434	j 2. 0-1	2.09	7 936	1.276	j 21 529
-2-175	2,631	202	725	25.0	992	17/16	1.47	0.750	7-5	15.877
1.50	1.727	2=2		3206	3663	1.0%	7.030	72800	5.479	19.927

- 1/ Data covers TACAIR and land forces aircraft in the Reserve Establishment. All costs are Navy-funded and include POL, depot level reparables; intermediate and organizational level maintenance; and squadron supplies.
- 2/ Fuel consumption is in 42 gallon barrels per hour (BBL).

Data Source: OP-20 Flying Hour Program Budget (Feb 90)

OPR: CMC (APP-41), Phone (703) 614-2189, AUTOVON 224-2189

Table 474 - CONTERCIAL VALUE OF OFF COSTS [Ex of April 1995]

		CALCOLUL CATIONS (Mail comment)			wanas (s	FIRE MOLES	
2521 2521	<u>>2+</u>	131. 7W 5ES/18	:x1. 803 EE3	01FEE-	DIETOT BOOMES	161 (4-11) 52575	12%
PASSONER *CRICES							
312	(A)16y	3600.0		0.06	1.17	0.25	23.2
#IR	20105	ACCE	,	0.38	E .25	r. 21	. 44
SERVA	30263	0040	5.	6.27	1 -7	1.00	E. **
\$10,1106 as yes	-3,612	1000	53	0.72	5.74	:. 15	5.39
780015 175 FG 100 504							
IN II	GOCT	5000	- 70	1.35	2.3>	5.44	1.12
901	COSET	13611	196	2.35	2.35 2.39	311	0.38
FIFE 7	60505	٦	.0	2.75	2.37	3.05	0.3
MCF.	ctc:	Pa-2	15	2.03	3.37	1.164	20.74
IRAKES SWI TO 1 Year	_						
PICE	0.7r	/553	15	1.05	3.13	7.66	1.80
City	64532	11555	e	7.05	2.77	4.46	7.29
market (45%) 7/2 (00)							
PLLTI - STOP	PCEA.	*111		3.00	1.17	0.12	2.69
2.472	: .11	2000	•	3.65	7.16	13.0	0.44
19,000 2 1/2 70 3 104							
(44.3)	201	2300	•	9.11	35.0	0.77	1.50
•11	200	2200	14	23.0	0.10	6:5	1.45
781008 51 75							
3.M*	3.34.1	1064	,	0.47	0.61	1, 12	0.47
PRINCIPAL	1187	AAA		6.11	1 45	i sa	E .5"
144610	2TF	766	į	0.27	E .52	F =	1.57
ASSMER	4977	YII:	•	2.2	45	1.12	r.5"
TRACKS TO FOR							
TRACE SE	GIJI 4	14077	5	1 1-	1.55	2.77	5.59
IFAC TO	61322	140.00		2.36	E. 77	3.47	2.56
##Efxfk	MAG.	16555	3		6,46	2.19	1.79

4-19

MARINE CORPS COST FACTORS MANUAL

CHAPTER 4

LOGISTICS

SECTION B: MATERIEL

4200. <u>INTRODUCTION</u>

- 1. Data listed in this section is associated with procurement of selected materiel by and/or for the Marine Corps.
- 2. Table 4B1 contains data relative to the unit costs of principal items of FMF ground equipment and information pertaining to the life expectancy of such equipment. Table 4B2 lists prices of high-usage POL's.
- 4201. DATA USE. Data contained herein can be used in the estimation of costs relative to the development or modification of tables of equipment. In general, replacement costs should

be used because they more accurately reflect the current value of an item. Also, dissemination of this data can be effective in promoting cost consciousness.

4-20

TABLE 4B1.-EQUIPMENT COST AND UTFO EXPOSTANCY DATA (AS OF BAR 1990)

	L	4,.4,			
TM3H	caz	4241	BENTA SHEE	SIATASS	L: r:
	n'	41	C251 (1709))	WIT COST	OPECT, MAKE:
	ITEM				
477,0406	ACTORISEN HARMERANCS KIN, TELENIARE	*L \$250.00	2,317	1,50	
**********	440/1/146708H SF1	Ph/103-27(4)2	91, Ra	27.642	15
F731100:	ALMORER HOOLE IN HATE AND INVASOR COMES.	447379 247472	775,760	576,000	55
4001076	AT PROBLEM HOST OF MANY AND MANY CONTROL SANDARD CONTROL CONTROL SANDARD CONTROL CONTROL SANDARD CONTROL	PA/300-77(a)*	727 (442)	Aug. 11	53
4005776	NAULYSEE, STOTOFICSE	F754)	4.20.4	1.444	Fà
r. 3137).	A45 SZER CORDEC*	17 55804	10,255	4.555	
47.551.00	ATTIMA	#\$49899y75447	10,667	15 .555	
•225676	CALLATE 25/30	Barrier (A	V.665	2,65"	
•11/17/0	ANIMATES DATA PROCESSING CONTRACT, FATH:	FC- #657680	±.1=2	3,917	
413904	WALCOMALEA DYLAK LACCERATING CONTRACTAL LALAN.		660,753	22. ())	
•077276	2002	4 1- 70%	4.524	2,749	₩.
4601	C. IND. CHIEF IN, AFTER	M/ZH I	27.15	75,119	
831 (2.1%) 831 (2.1%)	CALIBRATICA ART BETAIR PACILITY, MECHANICAL DA IRRATICA (CARITRA, MARGARIZADA)	75410704013	50, 155	bee, 111	
	TWINGS TON TOWN OF THE PROPERTY.	44/1884-110	672,477	275,000	
NU COR	COURTS THE SECTION OF	11200-120	1,004.703 1/5.357	272,449	
*32:075	ATTEMPT OF STATE STATE	441128-171	121 042	77,000	
1022575	CONTROL COMMITTEE COMMITTEE	14.734 F	12,952	5,550 913,000	
A33-910	COLUMN COURT OF THIRLY LING THE UNIO	Manuation	(0.5 +5)	955,200	
V08072	CINTER COURS TO SERVE NOW AT THE	54.101-440353	1.207,161	575,200 575,727	3
1020714	DE 146, 10-119, - 21914, 2004, 17	14.175 (42.77)	17,005,557	=17,671	26
AUGENTA	COMPLET DATE OF STREET	A4-3-21 - CSA	1,144,703	777.004	120
ADMITTA	CONNECT CONFOCIONATION APPLICATION	A 1/4F2 T'S	16.144.514	27,000	172
4026475	COPY, 40,744 DA (1941) Av.	34-665 15	165, 217	\$1,775	N2
20,2507.07	COPPLET DATEOUS CONTRACT	Legent - Thysne	571, 12	70.00	125
MOSTA	COLORA DIALON TITLE, ELECTRONIC COLIECTORIST CONTROL COLIECTORIST, CANADONIAL COLIECTORIST, CANADONIAL COLIECTORIST, COLORIST AND COLLIES CONTROL CONTROL CONTROL COLORIST COLORIST CONTROL CO	A477E01970Y0	5.7,919	375,501	27
199175	CAN PLANTING CONTACT OFF,	66/17# ***	512,027	>77,754	
MC24/2	CONTRACTORS CONTRACT	A (0.00 - 70A) (0.1	17,845	10,000	24
30000574	CANCELLATION SCATCH	(4) (57) (6)	200,700	333,006	
3929171	IZAN HISSINDE TOQUE KIRTO	ALV1-6 12	257,070	430,000	
A050972	CONTRACTORS CONTRACT	Ab/1404171	335,485	60,010	
WC1174	CACTRO CRETER , COMMUNICATION - CREMING THE ROLL COMMUNICATION COMPANIES CREMING CONTROL, EXCODED	73-7757-84	272,415	100,500	47
AM1523	TTU ACCUSTNA ARREST (FS. TOMIEGE CONTR.	C POSSUM II	2,019	6,5.4	4.
				8.400	45
	TIV CL TEX STRUCTURES STATE	04-25/17/2000	100,708	1.227	
A002573	CONCRETE, TSUCH RATE SCORE	(5.357) (5-757)	17,000	25.50	**
			>2.441	1.575	53
602273	AT AS CREATURES, ARE, EXPLOYED AND ARE	L* 27>40	52,641	1.53	**
	SEMSI, JIEE, ROSCUE EDIA SAS (DALA SAN MEMA): TRANS, FIAN, MOSCON TRANSMIC (MEMAIRES)		5/4.01s	5.472	12
			514,666	4.772 3.744	.,
AE 457/G	NACH COMM. ACCUTIONS CONTINUES	reconstruction	7.6.481	225,737	58
((-)77.2	CREA RELATE TO	46.1 14.35	5, 322, 413	600, 100	~
#L455/4	350000 F20-3	Mary State Committee	V.40	11 (2)	
/ENRSTG	00.0006700 kH	*1/10/01/6	107,172	181, 343	
(1)478:	1 3171 N A 6800*	*1/3GH C1*	11.7%	ii)m	
4247576	CREST, PIRE, SOCKET COME TO PREMIETE POETS AND RELEASE TO SHIELD DECORAGE CREST TO SHIELD DECORAGE CREST TO SHIELD DECORAGE CREST TO SHIELD TO SH	*97.4H-71	1,74	6.75	₩.
PC1907L	Called A words sisses a	2000	12.455	11,750	••
etrana.	CONTRACTOR SHEET TENTON	M798 2	76.65	75,330	30
4054376	DIGITAL CORE TERRORIA	447 60S	22 640	24, 330	50
#17 TO	20980 F. 1980 (884 ACRICE) 1385	M4-7899-108	17,710	75,500	
*C9127C	STREET ATE SEPTEM CONTRACT CHARGACY STREET OF CHARGA. THE BOX WAR	41) De 155170	771,745	424, 300	
*C5"ATE	DIRECTIVAL CHARLES IN THE BOX AND B	94.797-1:	342,599	72,000	.50
• // **	131F F. 101 700	J Barrat	10,555	3,000	
*CV1676E	E ECONOCIO THEE NEPAME AND LOVE		954,446	753,986	

TABLE 481.-EQUIPMENT COST AND LIFE EXPECTANCY DATA [AS OF MAR 1990)

	•				
14404	CIP.	48+1	ARRIVASHEAT	STept #51	1:+
14	ŏ.	W)	C28E (10/90)	U4 : 1 3CSF	ENTERF. (MES)
	LIPH	•		W. W.	E
1007-17	EALGARDE CALT, TOURS DIRAY ECONOMISSES, TOURS BARE LESS FORCE OPPIES, COMPRESSOR WILLIAM E OFF	sa_633.000	5,9 0,772	50 (2)	
8062973 8064573	COLALIZER, TOUCH RAD LINE	490021	2,144	7:5	
3965275>	FORCE OPTIC, CONVENTED SOT	AMISST 54 CHZ	5,332,941	10.05	
4065972	-116.41 6 >F"	JL/SCC TA	21,67	12.22	55
Ju/52/2	CENTRALOR, CLOCK	117 00-274	0,198	2 223	- 5
207457.1	MENERALITIES, STORM.	767-28 40E	7,225	2.142	73
201/972	Cherift Pt , Charl	747 - 04-NZ	6,667	1 600	= 5
2077574	(Sepaular Steam	44, 377, 31	6,247	2.501	
4488 577	DEFAULT FARAL, FIRE AMPL	CC424-002 ALV_94-3:2	13,750	0.573	Fa
A064573	GENERATOR, SCHOOL (17854AD)	447-96/3/2	3.76	6 552	.,
3981072	the attracted and, the "Mark		7,555,699	1,200,000	7
A/8514.72	CAD SO MORTH HOME FOR A THE CONTRACT OF	144 45 PT (4)	530,204	577 (2)	
AJ81972	(80,5) Magnip Howel RB - Tile Challes Ca Aggreggi I (1801-140 SRI - 480/24) -		50,705	4 500	
AXX272	NAMES OF THE PROPERTY OF THE CASE OF AN INCOME. AND THE PARTY OF THE P	aby yakingguya	7 690,746	2,760 (12)	
VW0174	INSTALLATION CLF. AIRSCRAC (FLRS)	447450 (1106)	6.06		
ARREST	B5 #LAH04 811-718 4 100 CHCC	74/944-577(4)2	6,168		
VW6573	INTELLIGIACE MANAYORS CONTRO (MAGES)	AF77(1:090V)	21, 536,265	4,855,100	723
A3864.70	IN Editor Fell ITT EFFE	76/760 544	F7,275	T	523
43/6572	pu bechen der i TV bebeit Machicking der Basic Stade De December Hotel Grad Grad Grad Grad De December Late	AB / 151+1684		9.150	933
4330172	th throughth room was dobuNTUR	OF PORTING 2	\$3,100	12.23	***
4000,175	th tisseafild att	Jk7.29C 2F	25,322	15.003	43
4 68.772	NV N 14542 195Th ROAD	Ab/Try 20	2,290,347	1,260,000	
3166843	HUNCONIA LICE	14.00.27	170,207	105 (122)	
43306752	AND AND ANALE CONNECTS CLEENTAGE CO.	-	5,731,697	45,000	
31 MALA	LICE AND REST OF THE APPEALANCE	749.42-7	12,555	10.551	7.
4391200	DE PROPRIÉS ET TEMPERAT MANTORINA SET, SETE STAND THE TROCHMINE POLITIONE EXAMPLE THE TROCHMINE POLITICA FROM METATORINA TOPALEY, ELECTRONIC LICE POLITICA FROM MANTORINE FOR LE CONTROLE LICE POLITICA FROM MANTORINE FOR LE CONTROLE MANTORINE FOR LE CONTROLE MANTORINE FOR LE CONTROLE MANTORINE FOR LE CONTROLE MANTORINE SET LE CONTROL	Mi-1/2/495-79	9.13	2.709	
6,001625	W.L -4143 E . / H 4.41 : No. 44 41	No. 1707(voj75	15,355	7.075	
1391676	HAGETONIACE SUFFERNI NOT	387,7477	16,000	1,522	127
4391775	MATERIAL MATERIALS CONTROLS FORMERS	JB/F30 B	25,662	30.515	55
43860151	MODIFIC ON SETTIONS SIN CREWSS:	24/10/1976	15 152,180	,275.00	123
4200070	HOLES DIGITAL DATA	HE TO VERVICE	7,27	12.500	13
5001004	18 989 1 240 14004 + 1/21 +	187 790	22,075	15.5.3	
BTT I F	HEREN TORCHASON	287 58-90	F 4,090	6/6,613	
B11102-10	(%) H : 15 10 F 1 11 12 1	20	7.4.	26 777	
V119576	OSC ILLISCOPE	IEI. 25561A	2,460	1.255	FS
41199 FE	OSC (LLCSTOPE	104 779	2,900		44
4119576	GSC (LLC) SOPE	JB7-24 3610	2,980	1.464	
4119970	480 75,75 38 6	Angleway 2015	2,950	1.602	
1110576	OSC (L:15/DOPE	347,54,2610	2,761	1.503	
an Open	UQ (LL)< 30 F	74 July 29 29 6	7,529	2.500	
V-144-E	OSCILLOSCOPE STORAZI	101/01/4	6,22	6.3.3	.,
612167:	CLM, ANDROV, GROUP CALIFE	1011/41/A 8/3007/ail	9,221	5 575	
A121617	PILOT CONTROL COMPLET FAME : FLAS	-	15,000		
4121576	PEDS 14, RT SUCCE STORAGE SCHERATTS	F 156 JSA	0,200	2 4-1	23
V2275	PENNEY AS CAROLINE TACK	JB7704-3	715. Re	16.003	
¥12976	MONORAL CIATION (A 600)	76779441780(6)	4,556,766	626, 842	
V-25075	BOARTONAL STORM NOT MALESC MATHETT SHE CROSS: MALESCARE MATHETT MATHETT MATHETT		85,932	24.557	
A12.00	PROFIT A CARDINATE OF THE PERSON OF T	10164	9,271	5.013	Fa
VZCV	POPER SUPELY COOP	OF 1557U0A1145	4,025	5.5-)	91
A1125 1-127	P06 (1) 04 L0041 (04 Net 04 1 +0 25 H	767-44-99	27 280,277	25,600,000	-
V-25 C76	POPER SUPELY SST	rpau-m	3,365	454	
V-25275	POWER SUPPLY	PF - 7955	4,174	2.457	
V-22275	PORTE SUPPLY: 12 ASSET:	<1C55	4,154	5 157	57
A12547L	PROFIT SHIPLY	FF-0770,/0	2,720	2.223	
V:25572	POVER SUPPLY	0.739270	6,174	5 520	

TABLE 461.-BELIEFHENT COST AND LIFE EXPECTANCY DATA (AS DV NAR 1999)

DUCK	LW!	•- b.	FORENCE		
		45	100 0000	(IVECES)	-1.5
	. 1-н			V#1	E=== :: ; ==== ;
A134175	FACTORSON ERGOR, STEERWALK FULL (ROCK)	OL 27575/C	<0.015	14, 415	
2102575	FECTOMENTAL AND STUDE TODAY	1-53861 1002	7,387	14 100	30
AID: 72	FLIGHT ACTIONS OF	AMATRIA DV	8.31	530	
AUSTRA	Fullific ALIADA William		2 217		
417.572	Full CADASSA SE	PA7 HQ-10(a)	4.22×	7,140	50
A139374	\$4.00 (444 (444 (444 (444 (444 (444 (444	ACCUMENTS	2,579,177	2,15,,400	26
(179)7:	MANY METAL SCI	4577000.2	W7 527	155,/33	là l
Alle' 57G	NUMBER (KA)	**/ * 8-10 (*) 2	14,510 079	2,181	32
A16120	4405 66 , 1 122)	847763-158677.2	10,612 ./9	1)(6.00	===
41.500	ANNU PPT, FIREFOLDOS	M//Ters:	2,615,520	1 493,500	72
475,80%		M4/109 52	9501 02	4,854,190	17
3307	SACAR SCT, INTITUE NATIONAL PROPERTY CONTRACTOR	44/165-47	4.205,525	280,000	-2
■ P.	When each transfer were the second received	A40100 55	4,774,730	834,010	.,
** 520T)	SEAR SOT, DICHTARISH BY	AA/PESISE	18,278,391	10,000,000	
61 550 FC	Walter Heady-Area Discolor Pautinianings	AMPTER-17	1.5 102	48.511	173
41 5307E	WEIVE SEE	May ki sa - Tana	1,474	1,1-7	
1 6267	W. (87 - 41)	Mile and Mile	1,000		
1.717:	-77 (4) (5) (-77 (4) (5) (40750 586	.053	527	
4 622 12	FACONO STI	All (100 Sec.		522	
V-86E/3	ANTERNA SERVICE DIGIT	All (Miles P	2,147	2.3	90
1100072	FASTE FRESLENCE HONDE LE MILITARIS DE LA COMPANSA DE	OE-3947(FC	599,197	240,220	
A171472	Michigan Sent Commission Commission	Abrus Kee	ಎ,ಟಕ	con	*
1.7572	P4: 1 Art		10.15		
1771572	P*1, 1 36-1	47410 (92	46 727	45, 107	
/101023	9012-91	447737 160 447483 175	2,215	1,84	.50
Albayyan	5+114 SF1		2.297	000	iet.
7100000	10/10/301	45/75/01/19/02	20,000	54,600	/E
715 1176	100 G	*47280-701 *16440 1104	121,448	755,000	49
4754376	MADIO SET	*4040:-1	42 573	55,925	
A 10507G	Redu St	14/06(-11)	42,57>	9,213	
#150%ip	Capito SET	14-HFC 575	47,573	0.172	•.
•183:76	SALIO NL.	14-66[-1]6	45, 52 45, 7	>5,000	29
•1.700	At 16 44.	ANTEC 15A	*=. r.	3.00	21
97,000.5	SE 10 50"	A4-661 77	1.42	1,675	-20
*27E17C	SECC SEE, Mrs-Med Chiefs	Any () (52,426	1,477	123
4737576	41 'c a-r	W/000 1/E	77,77		
4336615	90:12 337	State of T	2),17	17,007	
470/476	675 (c), 199	APARTO COMMOS	9,26		
3,5040,705	MILLS STE	/A/FK > 10	6,067	5,698 F 100	- 50 130
12071724	W) 81	467070 4126	27,716		30
A30/2/35	F4000 MT	CLUTS IN THE PLAT	00.45E	15, 576	
324072729		PL/14 (x () L*(x)	21.772	स. २०० १५,२५४	
30079744	k= () (xx-)	65/7 (21B/20)	/9.527	10, 100	
15(4374)	MATIGUESE 1, 12 C VENEL	45/780,570	417	147, 440	
42L717G	SADIO SET, Philosophia	44706Q-C ±	727,151	75,500	
771) IN:	15010 EE-	M17/60 12	14.752	3,446	12.7
4274576	SADIO PL.	491.701-45	0,598	1,90	12-
4275076	\$40 P.C.	19/201-67	11,772	2,50	16-
#21 S/T/L	C2 III Fe	24-281-5917002	15, 517	3,511	·
altrigitation	242 (0.507	14-13-6 21	1,721	·v.(1)	120
#714C76\$	Marior Car	W0580-8700	17, 751	19.35	123
ME WALT	RATIO SOF	ALVAD FALL	71,125	10.421	4:1
A21/0.729	RU 12 37F	Market - Fig.	V.66	17.657	237
AZITIZAR	ML . KI	74 (447-467)	80.500	20,255	- 11
			******		•

FAREZ 401.-EQUIPMENT COST AND LIFE EXPECTANCY DATA (AS OF MAR 1990)

T## E4	out-	•50:. •5	FEFURENCE T	37,0-0453 1961 (177)	11=7
		•-	200 171411		(STEEF, SMCS)
	E-SCOTTERMENT GET E-SCOTTER LY HE E-SCOTTER LY HE E-SCOTTER LY HE E-SCOTTER LY HE E-SCOTTER SCOTTER LY HE E-SCOTTER SCOTTER LAST E-SCOTTER E-SCOTTER LAST E-SCOTTER LAST LAST E-SCOTTER LAST E-SCOTT				
J218175	6-303 TERMINAL 961	48759011716040	55,748	21.855	42)
/2/8574	kea, a liferices, sect	ABOTTO LISER	55,592	CT.32	±1
/248374	##1. J 1969.L4 39-1	A47480 136	75,542	26,711	- 3
	METERNER, UM AM	F 2174:9:/288	0.516	5.337	46
422/9/3	BEDORBER, SOSIAL EATA	MO-7755y right	5,645	4.327	50
159517 W	ENT DEE, Live-Companie RETEXTER SET, RAFED LESS			242 777	3 0
4223773	REPORTER SET, RACID LISSS	AL7480-21	22.225	5.000	2
/275170	Separate Best-Res. F-	PP-588,E3750	2,741	5.531	30
424 11 70:	describe work took	30339	6,774	1.797	
AZSOVIG	204906, MERCINE, ALASSE BILANI, REMORE	ALATONIA ALADO DE (N)	46,181	24,219	30
4291970	SERSON, MORE CORRECT	447124 (4)	007,005	95, 00	واد
#25237G #25237G	STATES CONTINUE TO MAIN ILE TALL SUPPLIES	P4. 2 M-12 2	70,165	11,665	
	SIGNER, SLOCTKONIE MAINTENATOS SURFORT SIGNER, CLOCTRONIE MAINTENATO SUAFIRE	PATEMATE PATEMATE	20,16	11,8:6	
6522.2P	-4 166 11965 1616 74461 64 4816 4-1116	P47. 2H-1-1	77.55	2,513	
4445200	SHOURS, TACTION TO ETHICK THE COURS FROM TO		66.515	78,000	
4245000	SWAFE 11 THE FAT BUILT MADES	ENCOVARIO :	(5.1-)	10,000	
#25203ee	control 20 of the Mail State to	72430009C 7	54.579 92.551	52,630 143,930	
4244755	2 M 3 F 2 2 T 2 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2	#15/00/G4 1	64.447	121,:900	
*35°50	2481 PI-2148 II.	421 (Q.140.)	F4, 171	7.70	120
42504.7	SIMP. FLOORING IT	44/YAU.78	R/ 1/2	99.870	141
*277.57E	340P. \$1221606.10	647 TH: 176	EC,12	75,716	
*197576	SATE PLANTING IT	64/14 DE	((,1)-	10,140	
*200 T	S NOT. ELECTRONIC	99. AH-274	PL 1/1	11,989	
42.00 TO	S NOTICE CLEET TROOF (C	44	PA, 570	33.00	
42555 YE	SACTION, TACTIONS TOLETHOCHES FOR ECOLOR PERMITS SECTION, 10 TH, ECT, MILET FOAR PO- SECTION, 20 TH, BT, HALF COAPLES SECTION, 20 TH, BTSDD, FATAT CAMPIES SECTIONS IN SECTIONS IN SAME ELECTRONIC SAME SACTIONS IN ANIMALISM SAME ELECTRONIC SAME SACTIONS IN ANIMALISM SAME ELECTRONIC SAME FOR THE SAME SAME SAME SAME SAME SAME SAME SAM	NAME OF THE PARTY	57,134	52,770	
4277579	CORP. Printings (I	A476EN 52	52,137	9,367	
M2562.16	CHARLES OF MAINTENANCE AND CONTROL OF THE CONTROL O	44-124-274	1(3, 5)?	291,004	e:
4277776	20Com. auch, peuc 200 nn cen nna 1, peonta an	140 174-94	124, 27	127,142	
4828070	SMITTERSON D. TELETHORE, "MILAL	23 008/81	1,772	0.011	
420500%	SMITCHROUPD, TRITSHAFF, MARK	44-2278	1.762	500	
420,0000	WITH BACON, BI-AMERICANNY	90-96-7 90-25827932467	7,207	87,563	
520070	CONTRACTOR, THE FREE HTTP: POT THE ZE	50 10550002001	125, 171	15,000	36
ADUME	SMITEBOOKED, TELEPHONE, AUTOMATED	20 20 ht v 10	53,37	a,500	i.
Yearian	SPICEROSE ESTABLISHED STATES SE S	ac.1665	24,567,230	274,500	21
22.697 5 7	TAKT, CALL ALIF CACRATIONS MEDICAL KINDHS	AHCS: 25:00	0.307,736	5,472,500	12.1
AZZZZZ	TACT, DALL ALE CHORATION SCHOOL		31,417,442	5,530,000	
/257475	TVCT, CAU AIR CHORNING SCHRAU TVC TO PREPIERS HARRESHAFI CASILIA TACTICAL ELECTRONIC RECOM PROFESSION AND HAR 1865	AMPTEC SHIPE	255, 212	470,700	6)
A2075			4,539,880	4,500,002	1 1
A25+171	TARTION, DATA COMMANDICATION CENTER.	A477-1 53	2.225,946	545,000	17.1
A2547720	TACTICAL FEESIAC DAUGT SOF	Alguage Allgays	172,033	308.CC	147
A201574	H-4436 PF.	14-6254/11	900	F52	11
1447912	TELETHONE CET	TA BOS IT	997		
ALEBTIA ALEBTA	TOTAL SE , POLICE OF, HALLEST.	All and the same	0,077 172,707	5,247	
15(757)	75541411 TE 5351EL	14 / 12 176	201	02.23 °	42
A2:59/3	TERMINAL OF TRUE TO TO MAKE	16.8557990	2,526	1,45:	
/2/8771	TELETHARE CET TERRINAL CET, TOLICHAFE, TELETHORE TERRINAL CET, TOLICHAFE, TELETHORE TERRINAL TELETHORE TERRINAL TELETHORE TERRINAL TELETHORE TERRINAL TELETHORE TEST SET, CATOMACE LAST THAT SET, LAST HAS A TELETHORE TEST SET, LAST HIS HAS A TELETHORE TEST SET, LAST FERMINAL TELETHORE THAT SET HAS A TELETHORE THAT SET HAS	11 -9-7220	2,501		
4475572	755 91 CLT374FF - 41F	16 2836/110	2,516	162 16,647	i.e
756 8 774	Teal 961, 1, align tea	17-3239-170	3,42	9.7/2	>2 Pa
A2:35/2	COST (MACE ACAT ETTAC) (SACILIZAD	All report for	113,477	127 407	
C25337#	"eal (b)", 4e	Out service	187,166	125.003	») Po
42/99/6	TEST RET. ENLIGHANCES - NUTLIES IN LINET HOS BASES	11 8:52	8,050	2,554	
#27537G	SOCIONATION SACRET STRAND CONTRACTOR FACILITY VALIDABLE	· F - E 2 F 2 '.	1,056	1.00	
#E7537G	TOUT SET. SI-MUNICOTTEN CANADA:	FL; He.	3.05	1.69	
				11477	

TABLE 481. WHIRITHART COST AND LIFE EXFECTABLY DAYA (AS BY MAX 1890)

1413	1 4 E	H-:	S GARRY	3341433	1177
		k:	000T ((-91)	161 C. C.	PARECULINATO
	1164				
*86.0° (C)	rost cer	A441##-115	100 974	2,455	
*2606/C	FOUT SET, ADAPTER/ENTOADER	H1187.	2 11 .525	5 127	
*230TTN	(181 SF), MCMIRE/FE -40F	0' 11'W	490,473	2 >>>	
42810FC #281170	FOOT OF SMALE FANCE	/A / 78 * - 12/	#2 158	15,420	
4201279	127 16 1	16 vg (190vag	25,197	12,462 12,761	.79) 130
MA612 - E	DOM: THE	15-6-19/2019-0	25,544	12,500	- 20
4201075	IFXI -L I	15 401 8/480 05	35, 779	17,400	- 66
4201574	0681 - K.1	16 1073/460-00	67, 822	32,000	-36
446.512	TEST SET, AMENE	437,141,374	15,77	3,900	
190257:	IEST E-1, ALEST	ALC:14 137	65,111	-	
1200111-	1971 507, 7.80	15-5 April	i45. •×1		
A3MC/2	THE CASE DEFINE	#67484-11C#	2,100	1,000	
1295072	100 AZE, RAELO	46.0004.17	59,9%) 71,709	18,600 37,600	
4.05972	area san, partia	##11 GM 11	7.70	2,67	
2.000	TEST ACT, RESECRIMENT APPRAISE	75 (40.0) 57	8,721 8,675	0,636	172
27(4)7:	NEW SELL REASONS FOLLOWERS SET \$4000	75 31700.55	39,447	43,279	"
3200273	TEST ACT, UNIVERSAL	B2103621304//	77,675	7,075	
27111771	THE S-1, IN 4295%.	au 5206 15-17	:55	1,279	
4210773	TEST SYCHEM, DOSCITA, ASSOCIACY	440HF-)	29.575	17.222	55
/21557-	SOLVER, REPORTED BY MORE PROCES	730 360 5	5.505	5,312	_
/24777/	COLORO, POPOLIMIC ER L'HORT PETALS	PRC 300	5,545		
/21/-30	Type: /#XEMPLY	60 <u>1</u> 2707 46610	(27), (17)	2 (7.77)	5.
771 - 10) 4214376	491.61. (4PL), 300 ABS 10.01,	1 No.	9.55	1.747	
(2000)	AND DE DATE - ANNO 1811 - MAINES	0.35	8.597 2.311		
J222376	TON TO MATERIAL OF THE TRANSPORT	CAG	2,211	71)	
JC27576	TRALATE, TRETOWNER IN THE	20000 02	1, 212	7,720	
4775170	1 SANGER TRANSPORT DOLLER	An Charles	=1, 12	67,407	
*5257FC	FRACEPOADER ALL, CLAUSED WIN CLAUSE	AMPTENTS.	42 . 9	3,536	X
4525076	CHARLES OF	447.00 S2	2,709	1,077	
25/376	1-21 1604-	A4775 25	375,500	223,000	
•20r m	MANAGES STOTIFUS	FF507∆y 4 00	15,506	10,607	
•73XE76	A48.0213 \$20.000*	: [57:25/05]	75,596	15,667	
ቀለታው ሚ ቀለአል ጭ	AMAZET, SYCHEL*	164 2=> U/:#	2,300	<.ecc	60'
4700073	WELLING AVERAGE SERVICE	FR-17C B/OL-	5,599	5,655	
WHILE S	SECTIONS AND ESTIMATED	467224-018	40.346	32,591	Di
4001175	3/1-7-4 B-0	10.52.01	7,170	'9,000 8,545	121
A/015/2	35417272 DATE COSCS	PR-1A:51	3,455	0,545 7,715	
4700.074	787177 K 389178.*	17.3986	77,955	130	
A80474	-BECU-400 (28 LTH4) # PC187400	\$4,5526e17195	7.0	1.274	71
189401	COLUMN PURCEASAIC	440104-5555	1,624	1.275	75
28/52	(0 470%, TEE-1040)	5500-1	5.254	2.575	
1400572	CONTRACTOR AND CONTRACTOR AND AND CONTRACTOR AND CO	505 461	10,259	6. ::	
954) 1 V 2	CONTENT TREADER CONTENT OF THE CONT	25 mm 47/12	13.044	7.255	
2703774 2703773	The Article Market Control of the Property of the Control of the C	786	1 /**	2 747	
	COLL OR OFF, JOHNSON	-in the seed	12.321	12,7/3	
(7))ta	FAA-1410E F ST PERVANAUTA F	3.44	9 (1) (2 to d)	5, 236	.50
	6747/MIN F. O	TPG 21	10.17	15,397	
(721)76:	E-4- AIRM 51245, 15.4 (0.5 EA2)	400/0 >	1- 1-4	19, 900	
67 (D90)	\$54574706 \$16444, \$4557	6167.4550	2" 167	18,440	
42350KF	CHICATOR FLUST PEDCRAMAGNED PREFACION FLUS PEDCRAMAGNED PREFACION FLUS PEDCRAMAGNED PREFACION FLUS PEDCRAMAGNED PREFACION FLUS PEDCRAMAGNED PREFACION FLUST PR	O'Ai e	24, 256	51,203	
			-	-	

TABLE 481.-EQUIDMENT COST AND LIVE TERROTRACY DATA (AS OF MAR 1946)

:643	146	HOGE.	PFF1 4 3 4 7 91	01/20 PM T	.17
	14 HO1:	k:	cea, these	Mr. Adv.	6975771,00001
	.104				
ሊሜ:ons>	COGNICAL SUSP	24174	51.470	25, 300	
APPLITER		4297-95	26.55:	25,992	276
ATTECTS	NORTHS UNIT, NAMES TRANSPORT	25-4151-F	1.253	1,001	N .
#778675 #778075	OCHILISONS	STALL TAIL FR	2.27	2,000	
4734675	96211 (29/24)	21824	4.24! 6.723	5,621 5,636	
#7362Ta	Dealt (again)	SARE HOTTEN	5.09	1,174	
47,6370	DEFILLESCOPS	COMPANIES IN	6.50	2,160	
4/365/Eh	PROCESSED MICEOROCCINOS (POUDUSSUUTES/NATIVITA		15, 207	12,1%	.20
#737074 #737074	FENTAL IN F. LANGAGE	#1 871 8X	10,550	7,31L	
#730C74	B-MAN TO P PERMITTE -CLAFF, BANKE BAN THE LAWA A GARDANISH TO MANAGE, INCT MARKET CONTROLLES -CATES, METCH, *COLLETION - 2004 ***CATES, CANAGE MESCHART AND ASSESSED -	45 SE1 80/201 V131	6,59	3,74L 2,54e	
#739L74	IN IAN A GEFELIBETE	19821735500 MC	4,471	>,742	
#206517F	"SAIES, INSTITUTES" CONTROLLER	2 1125"/454	28, 120	15,14.6	-22
47515730	-CATES, METCH, *COULATION. >804	255124-657	5.98	5002	
•7!2E7#	PMNTA, COURIER RECLARA AND AND AND A	.006	2, 304	>,767	
71257	-Mills, L. alfilles, Malaysessan	99	7,448	3,50	
#7:/57.ac	AMIN, Budish Free-His annihasia - CMIS, I affilia, humananan Amin, isa daka ililina kasasana Amin, isa daka ililina kasasani Amin, isaada a, bila kasasani Amin, isaada a, bila kasasanga	9,16#	15. 716	23- C=-	/a:
P71517 a	ACTION TRANSPORT OF STREET	0.00	15,314 75,555	27,533	Salt
*7:557.a	emilia, em mos se se se senancer -	950,3786	2,446	> 454	741
•75a 7 t	#20164, 124-0704, 8.100 beloaded11- #20164, 124-0704, 5.500 for standage_5 #20164, 8.100 be beloa wearanded6 #20164, 8.100 be of the foreigneous #20205, 05011550000, PSDC508-011 #20205, 05011550000, PSDC508-011 #20205, 05011550000, PSDC508-011	7001	5,241	2,000	
M:69/3	*CARES, DECILISEDORE, PEDERNAMALE	N/55 My 41 (#	4,450	0.107	
********	ACMING NELTH ATTER NAMES AND A	M.)	5,064	253	
#71637 : #716.3 :	POTES, ORGANISE, CENTRALESCE EROOTS PER POTES, ORGANISE ON THE SAN	A-7-100 C15 A-7-100 6250	2,752,257	200	127
AP C:25	AWTER, THE RET, PLETTICAL COSTER	Advisor Days	25,144	4 ::1	127
494373	MIC THE THIRD HE LENGTHER SUIT FOR OIL		1,90	+ 736	150
494,524	TICORY SIGNATURE AND PROPERTY OF THE SIGNATURE.		:.700	. 77	.%
41/11/4	AND SEAL CORES HIS PURISHING SYSTOME OF		1,742	· /*:	.4
99,8 778 3330273	NIP COT TUBER HAS BACKSONIAL BUYS AND OR		747	4 736	
404074	MIR SOLD THOUGHT WAS A SECTUARNED WHAT TORKER BY A MIR THOUGHT WAS A SECTION OF THE SECTION OF T		7.175 7.175	7,577	.9
33,1276	ALE CONCURRENCE HOT BESTROOMAL 60.2 16000 DTU		2,10	(, 197 5 279	.\$
1A 52/0	UNI CONCENSE WAS BUSICED FOR SHOULD BOX 3 1/4/023 FFL		4,100	3, 2X	•
3000576	AIR CONCOTTONER MES MONTEUR, SONS 18000 AND		4.4	5,577	*
1ACS/D	AIR CHECTIONER HES MOTTON, (O.D. 1994) WILL		4.157	-	
40000	ми эво швенена на так бер теласти		(.7%	5,4%	.×
5000 576 2000 476	ATP CONT. TIGHES MEST ACTICCAL ESTEL 18AA GITU ATP CONCETTORES MEST ACTICCAL NODES 1 MACCINIC		4,743	2,294	
3000475	ATF CONCENTIONER MESS MENTILLAR MADRIE MACHINE		6.45> 6.45*	2,472	:r
1000176	ASS CONCURRENCE WAS THE NAME OF THE PARTY.		8.455	2,770	ič
200000	Alla Mad. Hinder eta ese du alVertalVir etti		6.715	2,934	iř
6972176	ALE DESCRIBERS HER WELLTH DEEP TOOL FT.		6.7 4	2,770	l+
10 ⁷ 4 114	A BORDONIBAY MANAGE ON SERVICES SIX		2.714	5,077	l+
DATE:	ACR COMPLETONES MESTICAL AND RELIESCA ET L ATRICONATIONES REALIZATION TO MOVE AREA OF		1.7 n 6.778	5,012	ir
MO.4	A ROBERT COMPONENT OF THE COMPONENT OF COMPO			2,775 5,677	1E +
U I I P	A R CONTITIONS NOT WATERLY FAR SECTION.		2.00 C 27	2,004	ï
NIT II OF	ACT CONDITIONES NEST WESTIGNE ESTE SECTE NA.		<. >7		i.
ra : 1- op	APP OWNER PASS MERTION SINCE SECTION.		4,137	4,8**	I.
	ACREONOMINES NES VERTIGAL 1904 2 DECEMBRA		10.14	5,000	i:
ECCUSE ECCNOS	ATRICACOTT CACO AND MIRTHON THOSE MARCHINE		5,5%	5,990	
FF706/2	A RECORDITION AND ADMINISTRAÇÃO ACTUAL SACIONARIAS DE COMPANION DE ACTUAL PARTICIPATION DE CONTRACTOR DE CONTRACTO		5, 790	: ,447	15
21.00.3	- 2 22 Martin 196 and 2001 lone - 2000 24/25/ 8 3		n, w	4,107	15

THREE 401.-EQUIPMENT COST AND DIFF EXPECIANCY DATA (A6 Of MAR 1990)

. 447	190	F1-1	854 ALMOST	77 8-£((0)	ιπ
		47	rier (#CH)	1711 6285	DODGE, SMGS:
	TIPH				
ECC3676	A S. Casulf custo you official young (SCO) A		0.007	197	15
FC23978	A CHARLEST PLANE BUILDING WAY AND CO.	64000 G-2	7,580	7.324	ié
NJ 24970	A CHARLICIAN FOR WHITIST MAY WILLS.		500	2,24.	iÈ
EU7117#	A 1 CC101112123 PES, CRID NO		132	5,683	ii
CC::178	408 COGNITIONS NOS. SLID NO		430	1,500	17
FC28078	With all 25 Perchases and Application of the He	201-10-2	163, 836	20,087	
M196-81	ARCHARGO PET, RISSON ESINGS		46.312	43,000	
BCD5 TI	BATH REPARA LATE EXPENSIONANT FORLE		27,274	15,660	í.e
FF19049	E=F4 (4)F. 74.2 PT)	E7:8E-94	42,940	5,257	4
EC1807E	Bern Leit, 1900 PT)	CC-8C 14	42,941	.5'627	
EE08073	DAT FLAFF, TRUE PT)	126 F C 156 V	45,673	3,113	(1
ccoseus.			28,772	23,351	
111/06/23	BYY, FACY, BYSON SRIECT	390384CF	61,738	55,312	
8013079 8013473	BLAT, DRIEGE CARESTICA BRIDGE CARESTICA SET (45)	1972640	150,000	1,7,1:2	.55
PL 5074	BORRA - ACADIMA - HER		575,930 14,000	179,1:4	142
PL 5/74	BORRA, HER WAR KEE HET VE	1431	1,074,440	19,642	12
11.774	F126 , -2890-11, 3/4 ii-,	43· 1·43.	- 108	, N	''
er:70.74		124	: 110	121	
1017079	SUPTO CHARLE NAME.	69 (7)	6,000	67,	
12:70.74		97 (7)	E. JIS	£1>	
15. (1-2-		is. 100	E. 72	7,000	
\$7.072	DANCE, CONCRETE RORIZONAL DISCRIBED SIN SU	•/- ///	*	,,653	
62176231	1301", (05321)	N32-EV3	1,910	1,654	
2721477	DATALT, GEN MURTOSC, 2 1/4 NO FATERATOR ART.		1/92	2,512	48
6721973>	1891", GEGORA 410050,2 1/2 h)		4,729	500	
312573	COMPACT ACTIONS	2700	47, 809	1,155	5.7
\$130070	COMPAGNACE, RECOMBOSETONG ROMEN DRIVER, 4 UTA		1,770	5,541	
130673	COMMUNICATION, NECCESORS TORS FORENCE AND A STAR	22007 5	2,7%	7,151	
3336674	1000 бейбай, обосновой населения комен, и оче		1,7%	5,447	
9 (5647)	COMPRESSION, TELLIFORM CHG FORER DELVEN, N. CYM.		5,00	3,413	
119675	COMPRESSION, SECTIONOR/THAN FORTH DRIVEN, A 174		1,774	3,621	
4090174	magnetische mendeleiseinfab ibmatte gegeber gegeben.	,689 *	257,34	22: ,757	
775/7/7	COMPRESSOR AIR 250 CFF TEL-4TC W/MCL4GT CO FOCUS		24,290	27,427	=3
13445730	COME, THOU MEED, 1281 DESIGNATE		710,225	27,513	
33/6073	COME, MICCORDA, 61 7 (yet) CACAC	dar-:	145,535	20,825	
33/4573	COMME, MICCO MIN SELF TO COMPRESSION CO.	156123	141,007	77,571	54
13/4524	SAME, ET. ALERSAIN CHE		**,***	40,771	47
40005780 40065780	FIGUREAU AND AMERICAN AND AND AND AND AND AND AND AND AND A	11/41	22.44	15,597	
4 8 2 1 4	CHECKHICA SELECT AND	1-12	22,64.6	3.955	••
7.4.7 E	DIMILITIES ESCO., ENCY SALAD		1,022	547 155	12 12
200	DEPERTING SET, HINE TORINGLE NOTINETALLIE	900 5		1.522	is
3347576	MITEURING SCT. 41-E FINISHED	74 1	177	1.523	"
26/976	DESCRIBE SCH. WHAT FORMALD, FORMALD	A1105	, car	1,722	
33675761	if :Foline +1, and	26-11		1,200	
28/2/6	DETECTIVE SET, AINE	95.12	626	1,733	
05720	Mant (fet, 1945-1913 to , Stept Missu, Internal		18, 177	12,155	75
057976	remark the type elements of the confidence of elements.		34,157	4.74	22
442476	14 **F 11 81, 12 8 +/1 * 35 ; .2 C.	14-145/1	15,112	6	25
Add AT			655,175	300.531	i.
#FC92%	COCHANGES, TARRAILIO, HUTTINIAPRI - ECUDO	MODE A	157,678	01.523	60
447003394	CIGAD WATER PARKS	14-102-6	7,360	5 111	
MCC100	PERSONAL PROPERTY AND PROPERTY OF THE PERSON	/247	0,70	4.736	84
CA:S>FE	PLOCOUGER SET, SEED WITE WITELES	-	1,215	2.532	55
	•				

TABLE 4B1.-EQUIDNESS COSS AND LIFE EXPECTANCY USED (AS OF MAR 1990)

1=435		MOCA.	BE4 /4 F5+1	F 44781	are.
	11	100	CF\$1 (9577)	LEST COST	C@CCT.(425)
	111-1	-	*******		
2000/075	resource arrait about, 10000 to cap		857	9,617	27
ACCUTED N	FIRE ITT ATTAL ACAT, 17,000 JE		5,251	1,451	•
4017776	PLY E 6783141874 W. HIP: 709-1811-14-014-	HIPS:	480,744	94,007	44
46270	FI - E MARKET BY C. MITTER, VIN-1811, 12-804	HILL	48.76	≠.00.7 ≠.00.7	43
442476	FI - E MANH 4: PTC (N'I II B) 218-191 (, 1/20/8)	HT-CAA	24.76	200	
Artoff	PLES BYS APPAS ASSAULT, BUT TAKERS, THEMSOLT	H6547	1,900,000	284,529	
X:2:π	FLES CHE ABEND ASSUUM - BOCCOD CAS CANACITY	HE71:	(800.88)	227,525	
X18376	FLEU 355 ABF13 ASSULT, 400007 CHU (AP)	HETAL	(532.55)	171,572	
χ/37 π	AZBERATOR SEE, 3 (N), 50 18 SOLE ARE	HET DIEG	2.2.3	166	15
87576	GEADWICK SET, 3 (4), 60 12 SOL 411	Mr alc.	1.7-1		
815.29	(\$4247) A SEL, IEVA, COD. W/LL-4n.	H-1-YJ-	11,12		724 P
44 Th		11-440/87			377 50
4-2-76	remedical particular files of the contract of	HE P -: 124	11.11	5,965	•
			11.571	5,133	24
2000 T	REMEMBER SET, MICH. HORD, STITHER GENERALS SET, MICH. HORD, SCITHER	HET LAND	19,425	7,043	24
22757		% 7.8/E	19.425	5,965	2)
X7957E	CONTACTOR CET, ARCA, SORE, SCILLARE	% 710/a	79.52	7,10	E)
> 77" TE	GENERATER SET, SECH, NEW 2. OKID MILE	HET TIKE	20,730	75,727	E)
ME. No.	CENTRATOR SET, BOOM, NOTED DOIL HIE	HER 115*	2.23	72,797	25
dr 19	тавлек октори, Обия, может веть-ит	4-7-10	2.00	4,20	_
dishib dishib	19947 77 981, 1633, (14), 8-15-411	H-F-Y-A	2.00	29.0%	24
	13447 21 361, 424, 626. 2 15-415	1.7594	4-,000	.6.25	
40.2 //	DEBAGOTT BELL HONGE AN COLD AIR	M 1 - 30 - 6	41.934	11,257	
11272	GERMATTY REF. (FROMITTE), SVID ATT	MET-3073	42.931	55,304	
ALC: N	GENERATER KEP, BERROLFED BLITNETHEN, LITTLIFY	HET XXX	(2.532	5,420	?
SICESC	GP+NEF, ROAD, MOTERIED	1202	72.75>	22,712	43
1109276	CARREL ROYS, MOTERIZED	1202	22.700	45,703	••
(145)7b	TELLOPHUSE DESCRIBER POSTED NO POSTE		55,159	15,000	••
<1572%	PRIMAR - PRIMAR PAIR BANDED, 40 BACIDA		145,140	19,007	
(115)Th	PRESENTATION THE LAND AND PROVIDED SELECTION	•	2.***	1,647	
314-16 P	ICE CHEMICAN COMPANY	H-)	(4.55)	2,002	
211574	ICC CECHI FLMII TRANSCOI	H 25	(8.75)	2,022	
3171746	ICE CEESAL LESAL				
2115276	ICC MATCH MATHER, CLACK	M15*0 26,70%E	4.557	7,757	
1115329	NET HARDES HAT HEET, STANE	78 175e	565	216,	
4143576		April 17 Cm	7,255	1,016	
40.79%		199.01	27,519	0.31	7.7
4127.10	TAMEN THE STATE HER	H-517	24,444	12.45	
2157942	LAVERY (MIT, 11810	MIN SERVICE	26.592	2,40	55
2155.42	LTWE CCCGATACINATING SESTEN	MI/4"	14.543	1:, 1/1	122
110000	THAT YEAR IN MAKEN KIT, THER MIC	21003	7.27	7,772	- 5
A12, 52P	MARRIER BOT, POPOSSURACO, PRAILER MODARES		77/1.754	172,605	60
AH: 360		HE 1% *3-1	72,570	#7,00°	••
2142342	LE, MITETAL JESTING (1),		6.53)	1,601	
SINEXE	FETWOLEUM TESFINE (IT		4.577	1,661	
6145320	FACIO CATEFERTIATION SCI, TOWN		21.772	1,312	
F155720	BBCM TAMBBROTATION SCF, LAIT		3.272	5,545	
KI2Y7#	PRODUCED AND THE PART OF THE AREA	#5-195	1 570,009	275,000	**
(Alexi 79)	DESIGNATION OF THE CO. LANCE THREE VALUE		1.775,439	22-,550	
F-l2/V4	THE ASSOCIAL EXPEDIBILITY SELECT FOR SIGNERALISM.		5.347	954	45
K172774	b. 42 veilieblig, feilischaf befieler, 120 ma	H-[1_F	5,248	901	4.0
E 1970/III	THEY ASSESSED, EXPONENT REPORTED, THE DISPERSING	M-F. JLF	5.342	953	45
F157074	ALAN ASSEMBLY, BEN, BETWELEN, SS GAN LID		1.512	:1:	
K1570749			52.556	27,550	72
M331584	6144, #3486 Wiles		1.750	5,700	77
6153579	FIRE, BACHROOM RO, PARRIMONES, COMPRESQUEIN	(#240IC	9.097	5,570	60
				-	

TABLE 401.-EQUIPMENT COST AND LIFE EXPECTANCY DATA (AB OF MAR 1990)

Turk	1UE	MOS.	arrement.	\$1,07480	шт
	ън 7.	14	2057 (1751)	2411 2221	Darson, (*c):
	ira				
\$1987J	FURN RECORDERENCIAL MADERN N.A. AN	244-52	9,167	2.8%	
6 10 20 TB	FLAN SEE, AN DIN. NO. / T. BAE		5.40	2 5 60	
F100074	FLM SEF, 65 SM, 57 /T EAF Numbers, 65 SM, 53 /T EAE		9.40	2 200	
14015799	PPPA(2PA) W124 (B 15		5.424	0.70	
6457CT4	FERRICENATION UNIT, TO 120 CU IT FOR	M 10 P) M 10	1,412	1 .2.	
6467YM	ACTRICOUNTING UNIT, 17/100 CU PT NOT	M: 10	F.A 'Z	=3.	
147,000			9,810	12,517	
C173979	PECH-CACHER R.C. (MA-		187,50	190 510	
11/2/3	P. TER ADMINISTRAL 3 CHARACTER HIS TO BOTH THE P. CLUSS. COMPACTOR, MISSELFORM	r ^T i	20,167	15 - 20	
647317e	ACCUSE. SOME STOR, VIEF-TOR'S	453 C \$#C%	14,70	*5, 265	20
640000m	SCRAFE MALTER, MAILED	600	149.01° 5.50°	122,000	74
ያተራሲያቸው ያተራሲያቸው	SHOP POSITION OF CONSTRUCTION AT		4,156	1,000	3)
FIRST	SHOW EQUIPMENT, CONSTRUCTION AS		0.157	3.55	55
F1=-:76	CLIO FA DO FRANCES MANAGE PRINT AND SEC AN	10000	52, 46 2	20, 200	ű
[4]/2[-9]		3840 0U	F30,763	195,790	20
#37 1: · #	2010 MOURING ASSESS N. CHR, 7 C 124 HAR THE A		3,723	2,525	3
	PE N RO HILL, APPEARS AND - AIR SET AC 50-1		4,542	4,573	5
D2781 T		14-174	2,227	2,245	>
	STORES THE HEITE, HE (F COM)		9,170	5,000	7>
Bell 56-P	6-1-200 MAC HERE, OF (FIGURE) 6-1-440 MAC MINTE, DR -> (80-004)	Fut - life	7,3,2	5,500	77
E231.478	P TRV PPI 17 MARKIAN		336,103	:6, 3:0	5)
624 9764	S. NOTE POLITICAL SET, CONTRACTION USE		99.40>	50, 100	50
N-1227F1	P. 4.6-1 P.		2:3,54	215, 230	2)
T<5153	THER FOLL HATEL, HALFIE SPECIAL PROPERTY OF A PARTY.		7,665	1,574	-
C3 S17	CHESTER, ROMANY, ANDREW	AT I	44,555	46.16	
EC ISYME	1640, FÉRRIC, CÓLLAFOIELT, 00004, 800, 74		5,847	1.40	94
FC 1204P	1946, FÉRRIC, CÓLLATRIELT, 18004, 530-74 1946, FRORIE, COLLATRIELT, STAVE, 5301-54. 1864, FRANCE, 18647, 2753-071-381149806-7		3,252	5.00	84
N/17179	race, Perch, arrest, 2000 NY SWITP Chin		2,002	2,500	
Ge en Je E	TOTAL KIT , 1 JOHN REPORTED TO SHEET		0,44	7,585	
ECAL OFE	TRACTOR, TOLL PRICEDS AND CONTROL CLASS TRACTOR, MELCIA, F.A. TRACTOR	PL LIBER	53,819	91, 190	76
6012276	16-1106, METC. 4, T. C. 1947/ED	FIRE CONSTRUCTION		84, 130	76
60 y 276	15-CTOF, TULL POLICED BY-BULL PURPOSE BLOGET TAKE	72 31NT 2 U/1	.66.664 120.575	35, 480	42
MONACON MONACON	16-110F, AUGER 128TD, -RINGLARD OTER	12 3 M 2 U	120.03	65,000	-2
N-1270	nestre, estat lexibilità. Nestre, an lexible, alexibila.	KC5306	129,002	15 100	30
New York		HC200	129,027	15,199 26,190	
6018246		40.48	92.744	0.30	AL.
1251176		MC ACCEST.	77,825	27, 850	
12,500	18 30 POLICE - 8000 14487 4	F1 - 1/84	27,993	15, 2-1	:>
5234-7	THE RESERVE OF THE PROPERTY OF THE PARTY.	Pas.	27,443	21,500	
£2950/E*	19.0%, 129.0°C, 1000-10.09 (4, 40.00.0)	F1 - 200%	57,617	11, 110	`₩
	"PACTOR, AT., ASSIS, LATER STEEL	Auto	40.00	95,746	
C2:7>7	INCOME A STREET, AND		8,4-2	2, 101	80
CCL JAME	PACK TO THE PACK ONLY SERVICE CHESTS		200,000	176,456	
MTCSXTE:	PATRICE COLUMN AND COLUMN		1.445	5,365	
MARKET PRO	MICHELLAND ONLY OF THE		5.887, T 1	2,002,230	
C2:2:73	MOTION TOWNS OF THE PROPERTY AND THE PRO	F27138317	30,325	0,62	
1771175	V.40 • TRURAF, \$745.0 DRM	57 GCD201143	.4.57.	5,750	
CCCMCC.	ALMAN ETIMICAL ACCORP, ALTO, TIMIATUR, PARASC	hav.	2.795	1,432	80
			72.525	12, 864	
(41.)78		H-1905	175,000	42, 20	
	CHOOSE PLANT, TRIP HIT		170,172	41,000	
	CAL ATABLE BEAT, SOLI		5.577	الملارة	٧
647/256	Complete St. Completeller, 7-9-6519-529		5,55)		

TABLE 481.-EQUIFMENT COST AND LIFE EXPECTANCY DATA (AZ OF MAR 1980)

· ues	426	+11+1	9714716(41	SERVINE	.:r:
	0-	10	2007 (1177)	9411 000	EM. 000 (MMS)
	ITE				
			_		
1 45 (174			19,517	0, 184	
	17410-4-7, 89-19		4,000	1 171	
	1744 FC 40 E11 (40 RO I		5.00	5.169	146
(44)3287			5,200	2,546	
(465-207			291	:	
08/37764			. 500	25	
	THE ATTENDED OF THE STATE OF		4.4.8	. 25	
CANAGE	Charles and the last set of the last charles and the last the last set of the		3,125	5,58	.6
04786-19 04786-18	ENTING TO BE THEE DEVICE PROTES. SOUTHTHAT OFF		17,005	8.865	⇒
(47357	TROOM, STIFFERS, STORMATON		7,875	1	
(22)278	FOR LIMES A LINE SERVICE LICE AND THE RESIDENCE OF A SERVICE OF A SERV		113,618	3,45° 30,680	á.
(55256	0.790/E0 H0128, 50:341 80k. 95 14		1,265	2,722	7
-557270	PERSONAL TREE PROCESSES AND ALTHOUGH AL		497,572	200.177	ı.
-572276	Familiation (AC)		15,745	5, 230	
-5-5%	248114 24 84", 2 - L C-11344		19,170	% 211	96
90010784			27,676	21,317	· 🖟
5/81/2784	эн-, бил "БГДУ) и они цивии одниваче		10,473	39, 565	180
2611 2477			22,872	2,580	. 50
24122764			10,000	27, 274	
201 Th	ner mé des casa, lecce i		2,00	-7 -90	-
70/1100		CHECKER	2, 162	3.730	R2
78 15 6	ANNUARES SET, THE MANY	Sortel	2,499	2,55%	20
797.02	CALL SEATION AND REDSENDINGHES EXUITY, OTHER		25,834	29.73	- 20
35554	COMP ENG PECNIF	CFC 17:00	2,177	2,030	- 20
C91,922	TEST STARD, ANDRE DICH ARE EDICENCY.	250	15,417	1.5 a	- 20
1909908	TEST SET, (MORNAUCE, IN LINE	1222 300	1,345	1.521	- 20
640537E	COMMANDA, MATA, MERCOLL MANAGES, 3 1/2 rows, 2 percon-	4 302	2,544	6.700	
LOCESTE	(1+5515), IFV: LT . S// T 2 M CC.	411/47	1,074	2.500	20
14/05/76	Chaudia, IPATICA, SACT 7 MACT	≈7 62	1,079	740	28
p(-))7p	(Lough, Signa ippeque & laid Hi)	1,000	17,882	1.435	
LACE TITL	CLOVES, MEST	230 5:1	10,760	1.552	
14/43/76	104.4 641, 1 61, 1995-0166 56- 168	470	2 277	13.579	42
007764	FOLLY CER. LOTE PROGRESHABLE SPELIER IS 104		- 1	4,745	
601274	COUSY, TRAILER COMPORTER, BUTCH 2 WICCA	419541	5,340	2.570	
E0127TL	LIBROATIAS AND SERVICIAS LAST FOUR CHEATE	17, \$2007	22,520	25.857	
conson	CUTSICATI AC MID SESSICORS DATE	AMOSS 1	22,500	7.:54	
LCZ307h	POTENTIALS, UTILITY 2 WHILE	0.8052	1,727	7/120	•
LEPSON	August 1941 (1966), 12 1/2 1/4, 405	MARKET AND A	165,703	17 533	41
107.576	STATE OF THE ALL THE PARTY AND ASSOCIATED BY	4-97-	15,611	4: 111	. 41
1165,5000	эвчения, чт вервения викетоб Тоски	4791	(1,21)	× :::	
1 Consults		4 (4	02,05	. E - 1)	. 90
LL 59.5-L	Seal-abol 60, company of the	4-8-	22,600	39,737	. 90
1.04233	CONTINUES, CINC, A TOP 2 MIL	4. If p.	27,117	3, 557	
E4570-E	KEMI TEMILER, RETMIN TWOPS SHOP MAY SHOW A MISSLU	420	59,257	77.520	
1177970	SENDONAL FR. Was extendible, C-1-6 (some-)	4511	55,167	10,844	
E1930/E	SEMI-TEMPLES, WAR SOME SEMICES, 7,178, ROLL 2-MISS.		117,362	13,576	
1053070	STALL THE R. WAR ELLSTON SALES TO 1/2 / 2-14-7	AV 947	14 (.757	7 533	
CC333TC4			18,407		
ri 7 07s	SECTION, AL DEC TO BE REAL 2 TO 1 A MINISTER.		60,060	A2 - 11	
L12,0026	eastree, closed without properties and re-		9.30	(6.579)	
FISSUE	CRONICES, ALTOHOUS CREEKS, BUT ON CHIECUTE AS CENTAL		25,51)	30,002	
1135532			57.70	** =3,1	
EC:440°E	CASH SER, ALPOHOU PUBLICATION ON SUPEL AS SER DI		47,070	39, 174	
LESYM	SHOP STE, AUTOMOTIVE, WARPE AS DRY FORTH ON		13,77=	20,000	

TABLE 481.-EQUIPMENT COST AND LIFE EXPERTANCY DATA (AS OF MAR 1980)

1,461	est or	*30CL	ROPLACORDAT CLRICK (FIREL)	\$7449E) (411-1271	1 (F -0 F1 (F75)
	171-		-		
2256274	Sion SCI, AUTOBORIVE SUBPLIAN, F4		147,172	20,0%	
53,3652	TOSTER, JUEL HARDTON PUMP 200 VALUE AN CAID FR		45 724	3,465	
135/676	TRAINER, APPLIE CARGE, CHAT, CLARA	€ 112	7,754 7,754	177	
230/074	180003, 04860 1/4 104 2 66	4° 124	5-132	151	
22/2074 10/4274	180028, 64860, 571), 2 Mil., 1800-4, 18480, 1810, 1844,	416441 416541	9,005	67 <u>1</u> 8, 49 5	146
336°E/C	15 F. AMPREN. 25 To J. 1741A-ASK PROBE. 424	fully HOT	4,172 54, 62	97,525	52
36070	THU, WHEND, WROTER RECOVERY AND	4CIS MCC C	142,004	137,257	- 63
232/270	TRUE, HOMERIO, BETT MACCULANS, SONE TRUE MONOTER	ACTO MODE D	(5,091	20,615	41
2207574	TALE, PORTECO, DE 1 NEV LECPRICA CARRO MACRAA	+17 mC .	107,006	78,540	57
20007°	TWO I HAVE BEEN CARRIED CONTROL IN 1/2 (Section)	114547	5,340	0,245	
7385/C 1103/3	TOUTEN, THE LARGE AND TOUR TYPE WAY.	4,454.	1,140	1,522	
1 8/15/7	CHEE, JAP. JAPE 1 1/2 INChief- Law	41111	7,74F 76,615	20.000	
1100175	too, make, which was comed, it was the exerci-	197	92,417	41.75	13
T'otale	pak mest a dinnen, edet non, ninge noet bear	4"1.39	27,708	20.855	13
), otaly	78000, 00750 1 1/4 104 D0050, W44	4.000	15,221	11,557	
3,01550	DRING, DOCUMENT SWINDS DUCKE WES	4.035	17,907		
110557	lent's, comes, 5 , less que utane	4-957	57,207	44.729	45
2108374 2108276	Magne, Femon, 5t, WAS opposing that Magne, cempo impossing, 5t box, two world	Meda Medaki	57,650 57,680	87.525 76.523	
).0552V	TRUCK, CARDO EFENNIES, 57 EGS. WARREST	H0154*	67,25	. 17, 222	
(100,17)	TANKS, CARSO ST FORM LOLD WAFF; BASE INCOME	MOSE	51,342	80.315	45
1.15.10	TREE CONTRACTOR STATES	H-615	97.766	20,519	45
7,00194	HOLES, EPROVED BY GOOD TON BROOM MICHAEL	M997	9.750	0.00	
71001780	HOUSE ARREST CENT AND SHOW USE THE THE THE THE	7/225/14-4 H-619	177,6-7	31,541	34
2078 2678	16000, 1.77, 5, 000 egyi 16000, 1.84, 5, 000 egyi	403	190,217 116,317	67,227	49
2,045.00	TEURY, COMPRESSIONS, C. 1745, 444	M.C5511	1:, 186	V	15
310E48K	MUCC, CHOMICHTING, DRIVE	HE::::	107,688	30,5 ?	
4007576	HODE, TOROTISETING, EMPLITANCE	MCCC.	115,775	36,754	
rijenit.	THIRK, HE ME HISTOPY ATTEMPTS A \$ 1/2 pieces.	H5*	2.5,624	61.5/5	=1
7104	HAURY, RESIDENTIANTES DIESTO ASS	M11.53	16,217	11.514	
0111276	TRUCK, TARK TURL SERVICE 1200 CALL & 1/2T 645 P/C4	M(54%)	45,711	50.75	
017176	18:00x,774x, 7:01: SEP413, 1703, 7:172, 55% azad 18:0xx, 1993, 2010x, 1300, 54, 7:172 , 7:07	HCC47	21,711 21,676	06-75 12-14 8	
/11257Y	IFE TON ENSKIEE, NOSA, I SW TON HOESDIF, MASS	HIEVE	39,917	25.579	53
2112579	IFE OFFICERATION CARRANGES, S. 175 TOR NO. BRANCE	HIENS	22,917	27.539	
0117576	make, Thebrid Strifts (Res.	H-57	1. (6.5	47,317	₩.
011 3 50.	IRADO, 1980104 S 704	M-E.A	101,804	-6.51	15
211550	THE BUILDING CARGO FRY CARACTER BAN FOR WITCH SITE	H625	25,007	X.2:3	22
011597a 011537a	THE TRAINING SERVE THE CASE, SWITT AND TRAINING MAKE THE CONTRACT WHAT I WAS A WAS IN THE CONTRACT OF MAKE	HISST HISSA	75,637 31,725	21,797 41,748	58 18
D11974	TRE OTHER CORP WAS I THE THE WAR	HITS:	57.721	77.5.5	->
0110377	16.00, 171.075, 1945, 494,	HIS A:	5,002	15.55	
11116376	16-25, 1-1-1'-	HIS A!	5,713	3 1 17	
1:17=1-6	mark the fire, were as received, by since, 1 per-	HI-YC	40,170	10.451	24
ulla ive	make in this, were at the other tipe in the in-	HILL?	W(C)	21,551	
141-14E	18.00, C44 2-1/21, C40	HLW2 HG2s	2,465	10 Janes 150 Jaan	43
DISUSA	1840s, 64-364, 51-565 1840s, 610009, 5-704	M-5.9	179,012	.04 '52.	-3
. (4017)	ALPPER SOME, TEST (EFFECH):	0/ 77/754	14,277	1,725	
60.7226	resulting site sentially		7,575	17.50	•:
20,000	APPLICATION FROM PROPERTY OF COMPANY		37.757	6.440	*::
AC2336	ARRIA RESCRIÇÃO ASSONDAM (ATLES)		115	. ≖	

TABLE 401.-EQUIVERS TOST AND LIFE SYPROTAKEY PAPA (AS OF MAR 1990)

14254	le*: 14	=01+1 341	4-1/: +++	F 64748)	LIN
	170	-	JON (5101)	7411 6221	COTT.: NEW
	10-				
*#465.F	NET OF THE CIT	744.7	25,725	20,523	72
*****	CATTER COMMITTEE OF HE	W/F90-03	59,584	55.524	25
-8752	#77 403 140, 34, -EWE-	H-15	84	1:9	
5.0040	GB+8384, AB* 1 Ib	H3	9,582	3.874	:1
SUBJES	SOUTH CLEANING/DANGING BOARDS (PCCS)	A-778016	472,572	170,003	12
5314273	SKISSO, SCISSON FOR WALK		159,678	70,475	43
2019276	SEISES, MEMORES MEDICALE LAUREICO	HCC+.	(45,00	727,425	9)
-145194	Mar Pi Assert Miller III - enter-	#4759-137	160,325	144,000	
:3151%	ANY GREEKS AND COURT - CASE	OK-50F2/C	167,325	144,657	
50154 34 3015574		MA PE-10206	645	575	17)
-016576	DARSON BATTER (104) SARSON, AND HAT IS RESIDENCE (A. 4-50)	19 - 75(9.7)	12,675	(1,40) 9,353	
2012774	Swarp, Surfer	PP75227 NO	2,277	0.153	
201625	LINCAL, MINING	HG=2	>,116	1707	81
7000574	COLUMNICA, LAFFERT - AIR 45, ACTORDAD	HI	.23*	* * * * * * * * * * * * * * * * * * * *	á:
407.34	Ye'de box, ex Alabilia with the	24/100 (1997)	99.34	1.222	•-
402778	NAME OF REAL PROPERTY OF THE PROPERTY.		77.657	12,233	60
0.075.00	DATE DISPLAY CROUP ON HANCOCK		10.627	16,226	Ÿì
2027776	DATA DISPLAY BROUP DO INNIVIZA		10,052	10,00%	80
500237%	(C.) 4441 961, 41041 Visited	(4.503-1V	92,000	44,58	- 12
6004276	is accide that H715		674		
5075776	-140.40 DEVIKE INSMITTING	MISS	18.111	11, 330	,
00077 .E	THE RE, DROSS INC. AN EINMING, WE		(0,5-1	11,900	
2051176	2 BATTER CONTROL COMBAL LANC	49/18e+ 3	2 302 111		
DOMETIC	2.)1 -: 2/ILL IBPORTE MAL	N-4226	8.65	4,100	
20e352 E	APICES, ON EQUIPMENT SEMESTERS OF STREETS ON 1206, OF TORCE, 108-4, PVC	Ny.	51>	72	
2064771	Del 1206, E1 "CMC1, "GE-1, IVI	Ki2'Al	217, 751	41.00	٥
100000	Oct G14, 16'3.04, 64, 15'944	F: 001	1.45.590	122,620	28
600 a 770	decision, maxim, ma, 450m, contract no contract	P. IV	1 43 590	125,396	
EDSN979 Dictary	MARIABA, MARIUM, SM, 10 MM AZ SIDIO REN MACHAR BALIFERA, MEDIUM, TOMEO 1566M, MIRE	P1.5481 P1.80	1,373,557	132,450	
F0C7379	CHISCO SOUTH AND AND	~~	72.7 !	177,277	24
PLC 2528	GHIDTE, TOUTD, 15944, NOT CLIEFE, NEWY, NO., F INC. CHIEFE, NEWY, SE., B INC. CHIEFE, I COVY SE., B INC.	····00	908 891	17,61E	24
E(6)20			1,104, 237 1,104, 237	151,534	24
Dic 32%	F-I PP2 I FeW SE R 14	****OA?	1,104,437	264,350	
ECCRITE	INCRONED PLATOON EDBAND POST I HUMBS	*4-10 0	19. 57	762,211	
ET. 707L	IPLUMPALION DOORLOWNING CEPLOTT THE	44463 111	1,565,552	443,000	
07270	SATERCEATOR SET (177)	#4-16s / (c	366 297	51,011	
FE77WW	Seffection and, samewhere (strate)	44(134)	83,130	75,090	22
6072928	TERRETTERS OF A MERCHANIST (N. 194)	NO.024-1	21, 229	7,662	
PL 7.1778	rungsantungs gen, der (stijungs)	MUTTIC SE	60,673	11,165	;
EC/201	CATCHECOURCE CONT. 101 (STIMECR)	•4.FF4.3	77,901	12,755	
FC7:90+	Marcha, Mar Méight Inde Priosagaigeann a	4, 121, 667, 4	11,464	15.b40	120
PLOMOP	count overse of	A 4.5	2,052	1.000	
62/46-0	ASSAULT AMPRICACES MENTILE FORMAT ASSAULT AMPRICACES MENTILE, MENSIAGEL	POWEAR.	145,000	1 3,450	11
0054670	ARTITLE MANAGEDIOUS ACRESTICS ACRESTICS	493741	954,76)*2,*2:	**
ECOMON.	AZBOTEL MORRIMINOS ACRITOTE SELENAS	411.671 ³	1,241,80	9≌,107	"
ECOTOTA	DAME, THE BALL COMMANDE AT	4	+,201	4.411	2-
EC39674	LWBCECK, SKOWOE /OMA	Arybachs MRCS	051	164	
LC01574	CARLES AND THE SALES (200 SAME)	H: 155 K-1 0	17.71	1,572	127
E-2/579 CO/9077	LMORAL SING VIOLENCE CONTROL		4,045	2.723	
E2/25/7	LAMPER SINGLATOR, STRINGS LAMPERON, SIGNARY, FYSH TON MARKEN SAVIER	MCCCC.	91, IFS 11,923,001	S 233	
F390574	DARGER, CORRES, 1704 TOR CORRES SOCIAL	H:224-1		229	:}
DNC9		12214468	0.470,661 2.495,005	2, 500, 230	
Every M.	MI -12 FF- 5-36	22107	ar>,vL:	2,300,330	

TABLE 481.-EQUIDMENT COST AND DIPS EXPECTANCY DAVA (AS OF KAR 1990)

TMCF	ex	*7#1	CACCO-	5744763	1.46
	or .	•0	2271 (1791)	-411 (Sat	-4411. (475)
	lie•				
tr\4 31	TOURY CT. 2000 LEMON GR. 2008	4.161.1			
EF.552.74	DAY AND THE CONTRACTOR OF THE	4-142-1	605,507	25.647	
F-31474	DV *5300* 2h		000 ! 000	9.2,000	
C-1:07	IAU to Marked 115 per option	4 5 5 5	507,990	711,444	
F-1-473	TOUR PRODUCT IN MANUAL COMES	1:03	231,000	90,157	
C-2:774	the contract of the		581,927	een, ray	
E-2072	100 1 10 404.1 (204		644,705	943.578	
1.000	107 1 16 7 29		517,625	463.501	
1 1 X 1 X 1	THE RESIDENCE COMMENTS.		057,120	511.023	
E2/2/1/2	INT THE STATE OF THE		545,222	2,31723	
57-75-65	AND THE CALL OF A SHIP AND A SHIP	HE 25 HO U	13,003	613	*
- MECIN	ANTI-ACTION CONTRACTOR OF THE SERVICE	ME 4.7		1 3.9	
- MELIN	MAIL M. B. M. 191. St., Mail 4189, 40 9 1514 8	KC .	12,241	n 116	
-/~E-IM	MARKET AND THE SECOND SECONDS		7.1	6 7°X	
-200	MALE A. M. 1.47K - P. C -	HE:>	2,164	950	.9
	MIT THE THE PARTY TARGET	H-23/3	4,407	2,500	
	W18 26 C24, 7,8,36	M-1-4	5.342	2, 201	30
200-200	MALESHA WHY - 20th #10 E-2011.	HC.	3.442	2,627	
48440	ADCASED BOX - 2504 P-DCT2>	₩:	3.542	7,027	
30.924	HPERINE DIN. 130	MC-10 #29 7	9,535	6,756	
2067549	NOTATIVE MIN, 53 CPL. 4 K	N27	3,542 9,505 36,101	22,561	.6
3000	MEGIFE 934 7.5%* L4	9220 9	6,579	4,900	
CICSS-P	to, disease sectors of most code, code,	##/1/#~S	27,414	27,000	12
CILYYN	NA MIRLER R COL. THAT ISS ASSURED SIG	(748)	30.536	461,750	77
F L 22/24	PECHUM CONTRACTOR DATA SPOCES (ED.)	44/1HE-11	1 915.536	1,401,000	24
F11 75-1	es, employite" Soution affilial"	44/160-L	F1.852	22,997	
175,442	MERCONTLOGICAL STATION	44/160-44	54.529	133,000	**
0168948	PERCOPOLOGICAL S'AFICH CHAIRE,	•4/TF3 F	7,525	1,00	60
C10>/2L	MCCROTCC E. SCI, 255		350	2.2	24
E1858/1	SECP, COSTLO MONTANCO COMO DE	•4/66÷ 216	77, 200	13,150	24
C 134571	ACAPTAN OF ACADA TOWN FOR ARRUPTED	•4-7-2-3	-61,510	275,460	12
6131979	ESABE, VIEW & FILESPAGE	45-107K/148	20,993	45,000	i.e
MINER	POHIDSIAU SET, DIO, TRAINING	M4: F2:11	52, 379	72,002	
E1100/1	*30340, 60-1 (DX-5	4104	11,500	7,712	12
E13/4/20	SCRIPT DULLSTED SCHOOLS	13	44,277	11,145	
E134E74	#38148 DEC., Olem H/A H2143	43541	10,797	0,475	
L*39074	-> 164, 166., 61 4 4	A24	14, 62	1,323	
P- 3025374	MARINE, MEDICAL ENTERES) FARSE		25,967	80,000	
2	40047 DESCRIPTION OF PROPERTY	A47449-58	3,564	r,553	0
-115124	MICHA MISSION SIGNAL TRACHER, CARROLL	A 1745-5	25,36	47,270	• • • • • • • • • • • • • • • • • • • •
5110570	HIGH VICTOR STATE THE PROPERTY WAS A CONTRACT.	4,7775 4	5,741	3,440	
5119570	GOT VISCALSCAID, CALIFORNIA ARREST DEPORT	24.7975.20	2,741	2.50	45
2115720	41647 MISTON SCART, LANCING PROFITE PROPERTY.	44-17-5	4,344	4.527	72
2515676	HIRE VIRIAM RIGHT CRESSESTO	A 71 (20-24)	4.157	1.537	
· HEAR	MILES ASSOCIATION OF CONTRACT	71.71 OH 15	47,756	(T 219	
-116578	PER SCOTE, DC - M/E	he i	4,575	. 271	84
51157.5	PISTAL MUTO, DU NS	F1271	147	396	-
CICION	PAGE FROM A CHARLES SHE WAS INCOME.	JL0100.20	V4 662	945,300	77
1 177329	MARK CONTRACTOR SOCIETARY		1.80)	~~~	12
6 175326	MIND . WH. SHIPSONATIC	.=	74	176	
e labore	P4555, #350#	F17.3 461.F4	2.25		
tD:14	BANK SST. (*) 21 (Profiture)	ANAMES AT	4,746.836	112,000	
C 13. 1.7	RADIA SCE. (4) 21 1 pr. 11 eres	44.000 / 10	4, 546, 646		
C13'37	FIGUR STC FRAC	#4.0E2 A2	31.32	212,000	
C 15:37)	NAME AND TAKEN	444 .92	2, 94, 32		
F111071	890/4 551 (AI-T) (BOD) 1 18-0	**************************************	1.60 42	272.000	
	in the limit i i-es		1.00	203,000	

TABLE 4B1.-EQUIPMENT COST AND LIVE EXPECTANCY DATA (AS OF MAR 1990)

18504	CHE	-200	804,400%	4174244	
	:fox	40	220 (HP)	-411 (45)	DECT (400)
0132276		44-6-1 14	5,967	1.690	66
2,35346		44-6-4	5,947	1.690	
2122476		44-743-50	7,276	0.520	~
1725776	RMICOSONIC FESTILEE	44/- 44/24	1,714	1 191	
172332A -725524	esti, silabile colore, filometallik mes. Pri Blim les celif, filoduk ritus, oyekin.		1,61	. 1,60	
-17579	PRIME TITLE 1, 100 (6), BALLETIN GX (CHE'-		945	2 530	
	RECOMENT VISICELE POLL TRANSPORT LICEN	6/5	93,983 1.597,515	56,716 100,500	
502200k		1947	1,157,615	72,100	36
DUNT	RES, LATTRICHARDING ACTUAL ATTR	.~	/15	2.1	
7178797	BESTON & AMERICA AND PARTIES AND PARTY.		20,70	20 350	
1145026	REALIMENT OF TO SAN AN ENGLY DOLL TO		lan	.11	
11400294	RENOLATE OF SAL AN EMPREE, SOUNCE BUTT	4- IC	las	8	
14.229	PENGLISER, NE AUTO, PIR AN \$5	410	1=2		
-144 5 29	PRESIDENT AND NOT BEEN BUT FOR THE PROPERTY.	411,	125	42	
	FIR (- 4(4-4)) 5 (464)	414+2	667 657	290	12
	LIFE, Yest	4164.	657	207	12
CINCLE	RIPUS, SHIFER, YURAN, WITSUN	444. 444.	1,25	740	
21610291	Ranua, Stines, Micatal and Chair	£4.			
11477224	SE NOS ELECTION USE		7,0.7	4,80	
10.30	WIN CO., I' AND CLAIME HOME INC.	447	669,055	01,550	
17730	GE ROTE DIA 150 Mile Dia , Chi Aberra Cadhail Allan	No. Adday	910,050 157,805	411.40	
· leb leb	Shirt bert in the court, a subject to the first	D. W. 11.	25.125	41, 09 12,500	
- 1 luk	Show Mary excellent and the		25,655	16,600	
71:774	GITT GO. TH. BUTCH. WAST.		11,00	25,300	
7177/4	GIOT COT. THE MACHINE. MONAY. CUTT. NO. 1		21,929	15,200	
(17.0%)	SUP SET, MOTHER RET		21.757	11,114	
117 S78	SPT NET. H. GREET, INSINERAL MAY NO SPT NET, INCOME. STATE, GREET COT, IN. METHOD. STATE, GREET COT, IN. METHOD. SCATE, COTE, NO. 1 SPECIAL STATE AND SPECIAL SPT., INCOME. SCATE COMPANIES SPECIAL SPT., IN. GREET COMPANIES. SPECIAL SP., GREET CARE,	447		0,99	12
117,376	SELP STO, TO, ORDINARY OWNERS ON	4ICD	51,749	74,500	64
4470	2077 20 (-0) GeTT 7694,		93.277	17, 69,	
These	NATIONAL TO CHIEF	5 ⁴⁴ ,	605	24	
11/1/4	KINDON, 12 SHOOL, RIPP	£.	655	.00	
175.004	strough, to souch, elem- strough, to souch strough to south southers south the strot- er was mean and accused that such as the shall refer to souther than southers.	90707#FT	655	Υ	
17717) -16796	SUMPLY SENTING MODER'S DEED OF STREET	AP / AU 24	3.8 9,65	(27, 205	
	STEATH TANKER ALCOHOLOGY SECTION	7177	6,632 3,633	5,16+ 1,566	
: 159:-1	N 8401 (NI 18 /F1494 - 4/1 841		3,745	1.49	.50
(1596.4	CONTRACTOR AND CONTRACTOR OF C		1,175	3.00	
	\$77Nu6509E \$71, 506		1,55	1,550	
e lessage	STWAIN PARTUR ALCOHOL TABLES (5 MAIN PARTUR ALCOHOL FOR		22,149	61,000	60
(12:77)	5-200 K1, A213-35		3',177	35,000	73
e1=/***	THE LORGE BY TO DON'T BE	WYST NEWSTREET	L MAR (AS)	645,745	37
E 15/8/4	1640, F3641, 191, 326, 00110094, J	HATA" (40 GA) N. HATA" (40 GA) TA HATA JANGAH S. 10 SP JANGAH S. 10 SP	1.778,538	547,425	-
0.1623778	TEXESCOPE, COMERGATION 4/E TEXT SET, V-PLITTO: CHEEF MEDIA - LOS ATOMAS	He3	225	152	
0453674	Tabli str. y-bulrati	JA/CAN S 16 SP	21,702	15,000	12
64-3676	Sect Marks for Arriba	Appropriate Communication Comm	201,025	48,573	
§1. b.·#	THE E I DE COMPANION INC. HERITAGE	AM 7665 HE1575/ OR 12 TOR AM 786750 AM 786750 AM 786750	541,451	24,000	
61977-6	TEST PET, BTBLATTAL FT. INCHES TEST SET MISSINE ZUITMATE TEST SET, 64	12 TON	17,465	15,141	
012.143	TEST SET MISSING BUILDING	##F##150	26.16	17,071	12
C 15.748	TOST SEE, 64	347F3H 1436	436,470	222,600	
142":T	en arr, es	JL/F2H 1V)	120.417	250,000	
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61.72% [127.43]	TEST SET CATUR. THE LIFESTED THROUGH	Aprilian (2) (g-186) and (c	761,770 70,412	125,000 64,066	
515 1	the are on the factority are the	ra- and saving	w	F-,180	

VALUE 401.-TONIFRENT COST AND LIFE EXPERIMENT DATA (AS OF MAR 1990)

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	ar .	10	Last (F/911	INII ETSE	
	: uzk				
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1422124	That she is the state of the st	*1015* 00	555,125	280,000	
433774	1741 FF , F MARK 1129 .F	10157 112	164,256	200,000	
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E ISSANE .	TOTAL COME TOTAL CONTRACTOR	17176	29,175	T.233	150
F1-2	1251 C27, 4-241 415104 5169	4-7 44-37	95,:25	2.530	.>
ES VISS	TOU, CIT. STOP. SMALL MISSELF SHAIL		1,421	1.53)	190
teave.	50. (11, 11, 110 WOO)		=,=c=	739	1.50
E5-445;	The state of the same and the same	# 500 CENTES	2,663	22.5	
E253E23	TOD. CIT. 14, E00 80000 TOD. CIT. 14, E00 80000 TOD. CIT. 14, E10 80000 TOD. CIT. 14, E1001, CHY, HOLE HOLE TOD. CIT. 14, E1001, CHY, HOLE HOLE TOD. CIT. 14, FIRE HOLE E01 TOD. CIT. 14, FIRE HOLE E01 TOD. CIT. 14, FIRE HOLE TOD. CIT. 17, FIRE HOL		4,950	N/ka	
E532657	CERT (11, 14, 41 See e. OR BATER. IF -QUE-		345	500	
PARCE	one of the amountained	NCS MOD 1	4,120	762	6
-220.3	100 (1), Wile 17 D X (1)	St. 36 (5)	2.422	81C	
53811.25	700L (11. 1AH)*, TV. 10, 55 EEN	39 TH (1)	5.117	2,214	
5.5027.57	TOOL CIT. CARE, TY. THEFT EER	39 . 30 (2)	6.42	2,000	
204.2	700L (11. 38, 77 ETF 389)	m-r. (5)	2.61	1,744	
1500.557	COLUMN TO THE PART OF THE PARTY	Medan (S)	4.550	5,004	
12021A	MALE KIT. IV, T. 4 F 415	M291, C45	27.43.	11,12 2	
-20,4694	HER SON CHEST OF APPRICATE CONTROL CAND.	Mr 23 -30 C	6.75 6.75	4,207	***
-37.15	INDUSE.	FE-1 F-1-7	عود ع	2,680	4
59572	mos. sen	PE-2 - 11-1	775	27%	7
Alt: 0%	INCL MA	PK 15. ME 1	1.777	1,255	127
2017	TOOL KIT, ONE, MAL		8, 775	5,000	172
23127.2	HER SET (AMENIA FACILITY GOT TOWNTH CONTINUAL SET TOOL SET HOLD SET HOLD SET HOLD SET HOLD SET HOLD SET HER SET HOLD	*1 (Kg	2,321	7.7	
C15534	TOOL SET, TIETH HE AIRCLE N A A REA	44DS 1770	26, 595		
CIEX	TOO: SET, FIFAH HE AIRLAND & A REA	NT 1417	1,730		
1218/20	Der Sp. 1 - ID IS ME AIDENAUS #14 FLA	#56 AT	77		
F11'W/F	100. Ben, Grenial Field Mailin, 20 CC	• We1	7,462	1.057	
F17276E	TOOL SET, STEERAL, FIELD MATERIL AND ELA	*****1	25,775	7,255	
031590	TOOL SET, DEGREE MACHEL BD COA	=40a1	6,612	(.25)	
E2130CE	1000 557, 20 00 BUMA. *150 #4		4,465	2.522	
C5 2422.6	SPACIFIC HIERONDAY PROPERTY DAY	2800001 2	2,960	6,550	
67 W776	execute time on the earliest factors.	8600051-5	17,47	0,440	
E Profese	TOO BEEN PIRKE PAINT ATT BY ELECT		5,007		
P): Q/P	TOOL SEE, WICKE HEWER		1,412	1.285	
E91 (577)	TOXASS, CERBURGO, CA, DEVASOR	a+1vr	14, 174	4,517	
6519673	TRUITOR, Mr. of Machiner	MODE STREET	5,015	5,795	
[5:6]73	TRUBER, TROBERS DE CARREN A CARRENAS	H7	, 122	F, 100	
2519274	Temperature of the control of the co	H 54	13,712	7,500	
-519774	100 Hard, \$55 F. Blog J. 40, 40 (600)	HE?	757	24	
7975478	FULINIAG SER, DA SASTON CTON:	H-742	40,452	25,77	
5>134/07	FW:SIMG SOF, E4 (ASTON (194))		97,643 37,653	26, PMC	
251797D	PAGE THE STATE OF THE PAGE TO	H-78	21.522	12: ***	
7419476	THE REPORT OF SHEAR (COURTED)	H 151	95,372	66 To	
-314776	PANSAITTI NG SEEL (SPINES)	ME I	5.577	3,900	
0020 B	HET HATE ACAPTAS CONTION (UCAS)	CONTR	36 515	100,000	2=
2985×#	DE-227, MAINTENBACE, STELLIFE	450184-164	VI.5d)	11,000	
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lable APC. -- POF COSTS 1/ (AG OF 1 UCS AP)

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	6 1410	2 (6-61-2:2-7%) 2 (6-61-2:2-7%)	No. 1 de la compaña de la comp	.57 (2.7)	į
	Lichterung brut English Lichterung blut eron	01-10-01-125-15.5 8100-01-050-5383	w., sale Singel con	13.66	ı
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	a three early was the appear	9 36-61-27 62 12 2 36-61-27 62 12	SS pail drum y light. List, machin SS-control the yillyabil	22.	į
	Luchicology Chill & Fortal C	F to 11 #5: 3.0	Ga., 1.15	1.80	:
					•

- 1/ Table contains high-usage POL's. Prices are representative of the respective general types of POL.
- 2/ NAVMC 1017, TAM, U.S.M.C., chapter 23 provides the fuel consumption rate for each major end item. It also lists factors for use in estimated requirements for oils and Lubricants.
- 3/ Aircraft fuels and Lubricants are funded by the Navy. Data is included for purpose of general information and enhancing cost consciousness.

Data Source: Navy Petroleum Office, Alexandria, Va.

OPR: CMC (LCS) Phone (703) 696-1037, AUTOVON 226-1037

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 4

LOGISTICS

SECTION C: FACILITIES CONSTRUCTION

4300. <u>INTRODUCTION</u>

- 1. Military construction (MILCON) costs listed in this section are those normally associated with the acquisition or construction of new real property facilities under the annual MILCON program.
- 2. The tables in this section contain construction costs of typical size facilities, a graph for use in determining cost indexes for facilities whose size is different than the typical size shown in the tables in this section, and a table with cost indexes for various cities in the United States with Marine facilities.
- 3. This section is designed to assist in preliminary cost estimation. Use of these tables provides a rough estimate of MILCON project costs. These tables are not intended to replace the judgment of the experienced estimator, engineer, architect, or contractor. Nor are they intended to be used as a substitute for experience and basic responsibilities of the user.

4301. DATA USE

- 1. The tables contained herein must be used in conjunction with each other to arrive at estimated construction costs. For example, if a new enlisted club was being considered for FY90 at Marine Corps Air Station (MCAS) Yuma, AZ, the following computation steps should be taken:
 - a. Determine the desired floor space.
- b. Divide the desired floor space figure by the number in Table 4Cl which represents the typical size of that type facility to arrive at a quotient.
- c. Locate the quotient on the AREA RELATIONSHIP scale of Table 4C2 and trace vertically to the FACTOR LINE. Then, trace the point of intersection horizontally to the Cost Relationship scale to obtain a resultant cost index.
- d. Multiply the cost index by the facility FY90 unit cost given in Table 4C1 to obtain an adjusted value.
- e. Multiply the preceding figure by the construction cost index for Yuma AZ, given in Table 4C3, which is 1.19. The product represents the adjusted cost per foot of construction.
- f. Multiply the adjusted cost per square foot by the number of square feet in the proposed structure, to obtain the estimated construction cost.

2. The reader is cautioned that data derived from this section of the Manual is for general planning purposes only. It is intended only to enable the planner to evaluate various potential courses of action from a gross dollar standpoint and to narrow the options under consideration to a realistic number. To get finite costs on a given project, a detailed cost estimate from representatives of the Naval Facilities Engineering Command would be required.

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Table 4C1. - CONSTRUCTION UNIT COSTS /1 (as of Mar 1988)

	TVD I GN I	UNI	
TYPE FACILITY		(PER S FY90	
APPLIED INSTRUCTION BUILDING	35000	76	78
ADMINISTRATIVE FACILITY (A)	25000	82	84
BARRACKS, ENLISTED	40000	72	74
BACHELOR OFFICER QUARTERS	44000	74	76
ENLISTED SERVICE CLUBS	16000	114	117
COMMISSARY	67000	93	95
DINING FACILITY/MESS HALL	16000	157	161
EXCHANGE	12000	81	83
FAMILY HOUSING	-	51	52
PHYSICAL FITNESS TRAINING CENTER	20000	90	92
RESERVE TRAINING CTR	23000	75	77
SHOP VEHICLE MAINTENANCE (WHEELED) VEHICLE MAINTENANCE (TRACKED) INSTALLATIONS MAINTENANCE		82 86 84	84 88 86

41

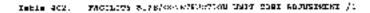
1/ This table should be used in conjunction with Tables 4C2 and 4C3. Cost are for FY90 and 91.

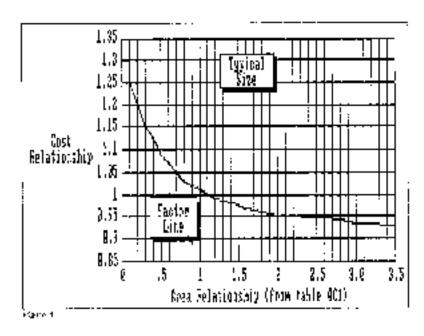
Data Source: DoD Military Construction Cost Review Guide for

FY90 and 91.

OPR: CMC (LFL) Phone (703) 696-1001, AUTOVON 226-1001

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1/ Determine the area relationship of the proposed building by deciding the building's area by the typical size of that type of facility as shown in the preceding table; locate the quotient on the Area Relationship scale and trace vertically to the Factor Line, then trace horizontally to the Cost Relationship scale. The resultant value is then multiplied by the unit cost in the preceding table; and factored by the construction cost index in the following table to determine the adjusted unit cost for the proposed building. See paragraph 4402 for an example and further explanation.

Data Source: DoD Military Construction Cost Review Guide for

FY90 and 91.

OPR: CMC (LFL) Phone (202) 696-1001/AUTOVON 226-1001

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ACTIVITY AREA	INDEX
YUMA ARIZONA	1.19
BARSTOW CALIFORNIA	1.20
BRIDGEPORT CALIFORNIA	1.24
EL TORO CALIFORNIA	1.19
CAMP PENDLETON CALIFORNIA	1.12
SAN DIEGO CALIFORNIA	1.21
TWENTYNINE PALMS CALIFORNIA	1.25
ALBANY GEORGIA	0.85
KANEOHE BAY HAWAII	1.44
CAMP SMITH HAWAII	1.39
CHERRY POINT NORTH CAROLINA	0.96
CAMP LEJEUNE NORTH CAROLINA	0.92
PARRIS ISLAND SOUTH CAROLINA	0.93
NORFOLK VIRGINIA	0.92
QUANTICO VIRGINIA	0.96
WASHINGTON D.C.	1.04
IWAKUNI JAPAN	1.58
CAMP BUTLER OKINAWA	1.68

 $^{1/\ \}mbox{This}$ table should be used in conjunction with Tables 4C1 and 4C2.

Data Source: DoD Military Construction Cost Review Guide for

FY 90 and 91.

OPR: CMC (LFL), Phone (703) 696-1001, AUTOVON 226-1001

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 4

LOGISTICS

SECTION D: TRANSPORTATION

4400. <u>INTRODUCTION</u>

- 1. The transportation costs listed in this section are those associated with the moving of personnel or materiel from one geographic location to another. The rates shown here are for the basic service of transporting; additional charges for special handling, preparation, etc., are annotated where appropriate.
- 2. The modes of transportation for which published rates can be provided are chartered aircraft and surface shipping.
- 3. Tables 4D1 through 4D11 should be used when the origin and destination of a trip is known and a precise estimate of transportation costs is desired. For current railroad, truck, or chartered bus rates, the local transportation management office should be contacted. Table 4D12 may be used when the origin and destination of a trip are unknown or not included in the tables.
- 4401. DATA USE. Transportation cost can be used in estimation of expenses expected to be incurred in the transporting of personnel materiel. In shipping materiel, information in MCO 4610.35C, Standard Characteristics and Airlift Certification for Marine Corps Equipment, should be used in conjunction with these tables to determine equipment size and weight.

Teble 401. - RILLDARY MIRLIFT COMMAND (MAG) CHANNEL RAIDS (PERSONNUL) (Sper passenger as of Jac 1999)

TO:	26 %. <u>COAS</u> L	20060 35060	TISSAL	JAPAR OKTNAMA	WEST GERYANY	Kuren
E30N!						
E63. 00A0. ¹	3/A	:90	3441	743 ⁴	£113	720 ROAGAN [#] 210 TADOU 217 06AN
MEST DOWN:	992	F/A	140	499	571	001 008A0 061 00300 548 05A3
FAMALI	284	115	H/A	4.19	675	404 088%
TATAK CRIPAWA	72C ⁴	469	:15	8/8	101-0	CA CARGO 79 16685
WHARATE PROB	4:2	531	57.63	1000	147.6	92 UUSAK 1120 TARIU (O BOSK
ROSEA TAZOU RURSAS OSAK	1,6 722 717	861 261 178	415 415 404	92 42 70	1122 1122 120	97A 97A 97A

- (1) Camp Lejeune, N.C. (Jacksonville, N.C. airport) used as east coast origin point.
- No MAC, commercial only.
- (3) Commercial from east coast to Hawaii.
- (4) Combination commercial and MAC. Commercial within CONUS, MAC for overseas travel, including St. Louis APOE. Cost to Okinawa is \$718 via Los Angeles--YCA (coach contract air) fare from Jacksonville to Washington D.C, YDG (coach discount government) from Washington D.C. to Los Angeles and MAC from Los Angeles to Okinawa.

Data Source: MAC Tariff AFR 6-11 dated 2 Aug 89

OPR: CMC (LFT), Phone (703) 696-0855/AUTOVON 226-0855

Table 402. - MILITARE RIGHLIFE COMMUNE (MAC) CREMUNE HAVES (CONTO) (courts per posited as of 1 Oct 1989)

	EMSF	VE*		LB+				
r2:	(alest:		JST TEVALS	494511 (410695)	Janas COLUM	CRICIN FACES	MOFE.	
160× .								
DASA COMSI ESHOR	5/8	478	1/4	1/4	258.9	:0 +	81 × (184)	
W31 10451								
F24,24	5/4	475	575	4.::	190	N/C	E/F	
1644: 8	473	177	5/26	77.2	M) A	***	674	
H-14141	CA	175	474	475	H-7.	H-4	'AZ .*	
104011								
F10 444	174	674	67%	473	. 27.7	H-1	132 . F (123 W)	
una								
0674445	775.6	186.0	115.2	151.7	4%	H-F	21.7 (25 4); 25.0 (1979)	
#25T (E1*M1)								
FLC: 4 HAIR	115.5	6.76	165.4	1/2	166	H-A	B76	
CREA								
0545	221.5	675	174.5	455.7	71.7	8/7	1/7	
M 45+4	679	6.76	676	572	84.2	H-A	875	
1461	679	1/7	679	6.75	75.3	817	7.1 (444)	

per like the content of the 25-11 days in the FR

Data Source: MAC Tariff AFR 76-11 dated 1 Oct 89

OPR: CMC (LFT), Phone (703)696-0855/AUTOVON 266-0855

^{164 - 464 (157),} Phore 1703:64: 0005/9070/04 205 1555

лаваа сол.- ЧТГТСАКУ БУКСУЕТ СОММОНИ (МАС) Бу 2 средская деятомены дактуру чтаятом (аван) вотер Бу 2

нагн ⁵ . EL 1080		>- Albas	1571	(1624 ³⁵)	**** AIMUMH		
1911/62/219	71:W	14.04	154	PORTA GREAT HA	0.130	: 71	
-c:							
P1: 0AA	18526 27526	120tb 10000	31651 27165		25/43 25/43	22303 27956	57730 55870
ON TROPICA	20057 21886	2003 2063	**************************************		17866 217 9 0	22/19 55/17	500% 5130/
15-311	595/2 1970a.	2900.5 17.784	02 125 8 - 124		1641 5550	47294 42746	19573 1978'2
NERT LEAGUE AU	29105 17557	99/00 37/00	78755 7676		5190 5261	200 200	1553) 1553)
20 494.	55561 25217	(225 <u>5</u> 2000)	1227ER 216457		4/2	4/2	40
41 YSB 14	39.04 (39.80	32929 3294 (72.00 (1750)		5170 5890	1950 4360	15 10 1520)
6987	30947 6864	70.61 4465	168459 170885		116	4%	1%
-41747	4,7	674	474		155% 555%	45430 91388	115326 155796
7, 9677	199	676	1.78		1980 1986	3798 2576	125481 15750

- 1/ The top figure represents a one-way flight with the aircraft returning to its basing point. The bottom rate represents a round trip flight with the aircraft to its basing point after completion of the mission.
- 2/ SAAM flights are designed to satisfy special, specific requirements which cannot be adequately accommodated by scheduled MAC channel flights or commercial flights.
- 3/ The basing point which is geographically the closest to the point of origin is used in determining the rates.

Data Source: MAC Tariff AFR 76-11 dated 2 August 1989

OPR: CMC (LFT) Phone (703) 696-0855, AUTOVON 226-0855

Table 404. - WITHINKY SKALLTY COMPOUT (MAKES (AMMO/HATARDONE CAMCO) (\$ par frosorierant ten [40 etc. fl.) as of ort 1809)

		LA-F-		162/44	ALVE.	4057	
H 34:	C7#57	C5+37	111	*414,747	OCTEMPS.	(EF-14)	E14-4
CAST COAs.	> 1 11 ²	*177.65	5194.28	4250.45	#:6.U	\$155.70	\$775.11
±9 €SF	\$ \$7.65	.e. e.	F.5.64	\$150.25	\$179.41	nuns	F145.78
Car i	m#.88	VZ.66	F0.4:1	\$120,09	\$155.98	277 .56	1 2.3
9946 9941498 507494	F270.15 6270.45	\$150,51 \$114.5	#121 33 \$125.35	760,65 ¹ 557,79	257,70 •70,80	F2(5,6) F2(5,1)	R66.85 160.30
ned. YERRIN	F32,50	\$777.47	2/17	1423.48	1225.75	\$4.5	#JV8.40
LESEA	£376 15	MISC. 75	\$151.75	•30.65	\$60.21	90,95,50	457.70

1/ Refers to intracoastal shipments, regardless of length.

Data Source: COMSC Inst. 7600.8H dated 26 May 1989

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 226-0855

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Table 405. - KILITARY STATIST COMMENT (M80) Males (MMSPER CARSO) (5 per messurement too (40 m), follow 00 001 1955)

1774:	TC: (75°	##> 17#*1	wan	.AF4V Crestilian	46784 5614648	#225 #24444	-1647
MCLOSS	47 K)	P179.85	prayuse	5069.15	\$771.70	e 50.00	#203.15
acon cover	\$152.45	455.05	497.15	\$142.77	me7.46	5245.25	\$150,00
94011	\$100.00	585.1E	\$17.65 ⁷	6477.72	250.20	F384.50	\$123.20
1545a MARKANO OFTIMA	92.50 % 50% 50	5133.38 4 57.45	4125.50 4121.20	976, 173 ¹ 767, 06	26 ⁹ .65 FY.651	\$2%.15 \$2%.45	981.40 956.25
SOURCE STANK	F 120.55	>225.25	\$774.53	#750.15	#700.43	\$2.70	\$070, \$7
11677	*4-9.14	555.60	\$100.53	\$25,70	\$56.75	R44.25	751,49

1/ Refers to intracoastal shipments, regardless of length.

Data Source: COMSC Inst. 7600.8H dated 26 May 1989

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 226-0855

Table 406. - Hilliant Stalist COMMAND (MSQ: RATES (FRIVATED) Length CSHI(LSS) (6 per schoolseset tex [40 cu. ft." as of Oct 1999)

	lů:	794) 6000	W.S.	111	35 CM 1911-241	- 4744 0003444	415" G21-447	4.440
·лн.								
5071-10941		29.10	±00 e.	# (75, A)	r:44.00	\$165.55	179,50	4,5535
900 CMC		45.00	27.0.	135.70	F1 (1.57	\$102.37	5151.10	\$60.50
EW.		r…5. π	985.75	1.1.7	4 ∵ 7.55	407.35	4141.87	¥81.20
M. FLAMI		NO. OH ALL	#1:1 #J	777.55	120.05	500, D ₁	0183.75 (187.76	\$37.75
04:33=43		F186.25	5102.33	297.55	400.00	-5 .X'	C 57.76	456.60
MEST SCHOOL	r	177,574	\$150.00	8.50.055	\$100.55	45,00	Ros.W ¹	¥177,72
FORCE		£7/2.45	\$25, 53	201.75	437 (1)	(99.80	5177.25	931.50

1/ Refers to intracoastal shipments, regardless of length.

Data Source: COMSC Inst. 7600.8H dated 26 May 1989

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 226-0855

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TOUGH RAD - NULLTERY SECLIFF COMMUNICATION (MSC) PAICS (CARROLD CARRYING TRATFFREN) OF pair MONTH OF CONTROL CONTROL OF 140 CM. St.) we be due 1989;

• • •	6461	PES:		AP4L		9791	
704:	30/37	(3625	MANUAL PROPERTY.	45HJ 4CI	14, 444	28,9677	1065-
F441 (2K)	\$10.45	dea 17	•:4,15	310e 10	5105.95	150.55	\$106,70
SEEF COAST	140.00	901 CO	275.25	474,62	e47 AN	287.25	461.27
Mall	477.15	920 37	60.96 ¹	400.65	•79.39	2.46.33	W2 79
ACMA 4006 /62	V195.46	4/1.25	419.15				
SCHOOL SES	\$105.45	3/5 27	#14,85	274 1: 82- 14	775,301	1106.75	92 (±9 922 (#5
#38 (89** 10	#0.55	467-29	51,83,25	505.70	\$108,78	\$25,057	\$111 77
4196	\$104.50	*61.20	F82.05	%1 to	522.75	27.73.55	\$70,05

1/ Refers to intracoastal shipments, regardless of Length.

Data Source: COMSC Inst. 7600.8H dated 26 May 1989

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 226-0855

TABLE 4DI. - MILITARY SERLIPT COMMAND (MRC) ENTER (STECKAST) * (5 per descomment too (40 co. ft.) as of Oct 1909)

	 +#+ 	0-61 2006	4:14	. A-44 No Colomb	15.76 2515/0 9	ter Appeter	677EA
1879				., .,			
-441 15#F	±14.45 ²	61,0,50	t 21.00	4177.32	ET ANIAR	48-119	May 50
4051 (7 8 7	±100 15	-37 m²	to0 +5	60°.5)	r:39.00	¥146.29	\$10.75
PRE III	1921.00	e50.05	401.572	af7.35	900.20	±172.07	B\$4.37
TANT				545,52			
3/11/24	\$170.25 \$177.15	575.80 5109.80	NO.22	\$21.73	832.15 813.661	\$190,50 \$101,85	\$000.07 \$16.70
und arrest	Sin .25	\$115.22	¥179.25	\$197, 13	F17.75	\$20.75	4105.30
COCA	\$14.50	5101.VB	NZ.EC	521.3>	454.CE	4"25.33	555 137

- 1/ Aircraft when shipped as cargo.
- 2/ Refers to intracoastal shipments, regardless of length.

Data Source: COMSC Inst. 76008H dated 26 May 1989

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 226-0855

4-50

Table 609. - HTLITARY BELLEY COMMENT (RSC) TACKS (SHECTAL CARGO) $^{\pm}$ (S pay massivement ten (40 cm. Ff.) at of my. 1989)

'F0+:	4	E867 60667	Mar.	P3-311	4000E	.65*4 0616*14	115 1167447	COSA
CAST COAST		525.62 ⁵	din st	mortal.	1200.45	5777. Y	771.30	\$169.70
descriptions)		\$115.55	261,782	250,41	\$110.43	\$175.00	er so, ay	minause
PATRICE.		\$161.40	259,70	\$15.112	*64.67	1 20.25	6.95.05	\$4.20
. 7744 HACHLAND Let Affair		2277er 7272.70	610.55 5121.65	946.53 \$100.25	275.77 ² 750.88	100 to 100.757	640.25 6207 4.	\$61,97 9 42,77
arat is hear		477.10	F186.40	\$157.00	-220.55	K201.50	441 (1)2	€1- 8J
47854		CW.4	\$116.15	e== 70	T#1.25	540 70	5246.53	192.50

1/ All tracked and wheeled vehicles (less POV) and any commodity which weighs more than $10,000~{\rm lbs.}$ or is more than $35~{\rm ft.}$ in

dimension. Does not include uncharted aircraft or stake/van-type cargo-carrying trailers.

2/ Refers to intracoastal shipments, regardless of length.

Data Source: COMSC Inst. 7600.8H dated 26 May 1989

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 226-0855

4-51

Table 4020. - WILTERY SCALIFF COSMAND (MSC) RATES (OFFERED TABLE) IS per measurement bon [40 ou. fc.] or of fact 1989:

7 (2 04):	5: F251 00/51	15-27 15-27	EVANT!	See Enteri	. #544 18 442.	2-01/25 2-01/25	.1864
Fea - 90/50	.w.gr ¹	\$00.25	e80.95	\$141.47	a124 (O	50.00	¥197.5)
PEST 00/57	\$30.00	\$77.25	\$10.50	\$77.11	697,20	et water	#81.50
1	M3.55	\$40.50	19.2c1	\$00.70	#73.5m	¥ ₹7.15	\$60,45
. 4444 4414 (267 2014)AG	6120 AV 614 1.20	50. 31 50.40	588.95 \$40.55	\$25.77 \$25.71	753,904 325,70 ⁴	8757.05 8775.05	456.85 437.42
9551 2 14955	#88.00	5115.97	500.00	\$154.25	\$115.00	400.75	\$151.55
47.5.A	\$199.4L	5170.50	PW.30	\$41.25	:"S.7E	Piaco	ser so

1/ Refers to intracoastal shipments, regardless of length.

Data Source: COMSC Inst. 7600.8H dated 26 May 1989

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 225-0855

Table $\psi(t)$. - chann whencise rates in Poct k (9 mm of 1 October, 1969)

	.040		Q41,7401.4G	
	2441	9257	E427	4001
OULD TITO	22571	SwS i	COVS*	COMST
Applicate protection	59.65	м.Ж	\$3.72	\$0.75
YALII				
GENERAL.	\$66.75	397.70	F#1.72	543.06
FE/F SCHATTE	272.47	*51.99	*27.94	251.77
$_{\rm SW(2)}$, and significant balls (12 of the 2007); 4 .	\$20.55	725,42	P>.42	+22,01
501.08.464				
30.4	\$110,85	507.47	593.17	575. W
DOMESTICAL LOGICALS	427.67	554.57	377.07	151.58
POSSERIES IN CONTINUES INCOMES OF	167.75	44.15	60.50	P j Ni
1,434, (084,64)	146.14	\$1.47	4: %	>57 11
NAME OF CONTRACTOR	\$116.55	±1677-15	479.15	54F. 3
eustastingev1		-	-	-
regions and the out offer.			-	
WER - GODE CONJUSTICATION OF CHECKY	PA 95	220.01	21,712	\$20,00
VELOCIES, PRINCE COMMO	525.21	157.88	E00.62	F(s,0)
VEHICLES (MIRELIA) OF IBECUTO)				
0:T2 15,000 LSS	>47. %	\$53.66	MY JEE	1.9.75
Description and the second	517.42	755.73	F19.94	F27.01
10.0	_ // //			

- 1/ Per measurement ton (i.e. 40 cu. ft.). Cargo handling comprises movement of cargo from ship to dock or dock to ship.
- $\ensuremath{\mathrm{2}/}$ Billings based on cub produced by outside dimensions of van or CONEX.
- 3/ These rates require a special quotation from the Military Traffic Management Command.

Data Source: Department of the Army Circular 55-89-1 of 15 Sep 89

OPR: CMC (LFT), Phone (703) 696-0855, AUTOVON 226-0855

TheLs (0.12. - eveness independential cost within comps $^{\mathbf{1}}$

PASSEC:		FEELS III / by mode of its/page / y				
	December Pro- Service of Mark	*87	Pollary per Tor HI.+			
4° F	256	well wide (1),000 in the larger (, 200			
3.4	LTTE.	Serious (New Stein 19,000 lust	42			
O'LAN	.>-	Francis (77,000 (A) or mails)	.5%			
Consolite	.12	mgwww.(Devarts 10,000 five)	279			
->6>799-	DESPENDE	No. Sec. of the	.890			
-:::	Fellany Far Historia Wolgie	-11^	.012			
В-стар к	47.56	Corpovints	.635			
7EF*: 44.	TEALSSHI NEW*	Follow Log towers to gr.				
4 all -	nHan Hie-	Extradity	Delicing Port			
Average	15	care mininges, lossicolo	.072			
		rou	.0474			
		We of the Billion La	4421.			
		House to	3722			
		Supplement	.10			

- 1/ This table is designed for use in general planning when the points of origin and destination are unknown or when a quick general estimate of transportation costs over various routes is desired
- 2/ Rate for shipment by rail of less than 10,000 lbs is the same price as loads 10,000 lbs or greater.
- 3/ This cost factor is an average of all personal property shipments regardless of distance or transportation mode.
- 4/ Worldwide rate. Terminal transshipment covers movement of cargo from dock to ship or ship to dock.

Data Source: Military Traffic Management Command, Traffic

Management Progress Report, Third Quarter FY89

published 05 April 90)

OPR: CMC (FDB-P&R), Phone (703) 614-2206, Autovon 224-2206

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 4

LOGISTICS

SECTION E: ANNUAL OPERATING AND SUPPORT (O&S) COSTS OF SELECTED RESERVE UNITS

4500. <u>INTRODUCTION</u>

- 1. The costs listed in this section are those normally associated with operation and support of various type units in the ${\tt SMCR.}$
- 2. Table 4E1 contains annual O&S costs of SMCR units. Total costs are broken out by components as follows:
 - a. Personnel
 - b. Training Allowance
 - c. Consumables
 - d. Base Operating Support and Other Operating and Maintenance
 - e. USMC-funded 0&S
 - f. USN-funded O&S
- 4501. <u>DATA USE</u>. This data should be considered in estimating annual recurring expenses of O&S SMCR units.

INDLE 4EL. - ARMYAL OPERATION & SUPPORT (085) COSES OF BELECIED RESERVE UEITS/:
(\$400; IN 3794

17 % 06.1	PESSONET 105172	7841HIBG 84.04/2	00197815	006 / 00678 04479		354 P440L C5546	65763 16-10 655
600040							
CITLE ORESET	595 1	0.2	2>	23.4	294.7		654.7
AP7- 94F2Y	227.2	19.3	27.5	70.0	775.4		769.2
RECOM COMPANY	457.3	10.2	31.2	50.4	534. F		255.7
AN COPAN	77F.Y	4.1	48.1	F2.2	11 14.3		1182.5
TARE SCHOULS	25	2.9	2.75	25.7	2 5.6		71a <
AV047064							
AF STORE YES	727.0	0.2	20.5	9,4	522.1	200.0	3522.1
ON THE WOODER WAS	729./	6.9	r.1	51	721.2	074.5	1545.3
MC140 SQDER NASS	1654.7	10.2	20.5	2.4	1471.6	3690.0	5001.8
14 TV 20069-191	775.G	10.2	2F.5	5.4	EWN.T	510.5	147: 7
IDATE AREA POP	9.7.0	9.7	10.1	2.0	457.0	(33)	2727
13-57- XXIII-L 1944	121 .0	20.6	ly s	11.5	1279.5	4491.0	5425.:
MISSLS GIFT	424.5	70.2	20.5	111.3	132.7		252.7
105 50084 (974		0.5	2.11	1.9	77.4	5177.0	677.4,2
AL 14 SHEEL 159	722.5	10.7	15.0	4.0	788.0	612.2	1565.0

- 1. Notional units at T/O strength, operating independently of other units.
- Pay and allowances, travel and messing, and billeting of reservists.
- 3. TAM items (types 1 and 2), such as blankets and field jackets, which are procured with O&MMCR funds.
- 4. Procured with O&MMCR funds.
- 5. Base operating support and O&MMCR costs other than training allowances and consumables.
- 6. Total O&MNR funds in support of 4th MAW Flight Hour Program (includes ATD).

Data Source: Marine Corps FY90 President's Budget Submission dated Jan 90.

OPR: CMC (MO-B) Phone (703) 614-1840, Autovon 224-1840

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 5

STANDARD ORGANIZATIONS

	<u>PARAGRAPH</u>	PAGE
GENERAL	5000	5-3
SECTION A: PERSONNEL AND E	QUIPMENT COSTS	
INTRODUCTION		5-5 5-6

5-1

MARINE CORPS COST FACTORS MANUAL

CHAPTER 5

STANDARD ORGANIZATIONS

5000. GENERAL

- 1. This chapter provides cost data concerning Marine Corps Standard FMF organizations.* There are four principal standard organizations within the FMF:
- A. <u>Marine Division</u>. The three active divisions are the basic ground organizations within the FMF. The principal elements of a Marine Division are a headquarters battalion, three infantry regiments, an artillery regiment, a tank battalion, an assault amphibian battalion, a reconnaissance battalion, and a combat engineer battalion. In combat operations a Marine Division is employed as part of a Marine air/ground task force in conjunction with a Marine Aircraft Wing (MAW) and selected combat support and combat service support units (see Tables 5A1A and 5A1B).
- B. Marine Aircraft Wing (MAW). The three MAW's are of somewhat different composition, but all are tasked to provide offensive air support, anti-air warfare support, aerial reconnaissance, assault support, electronic warfare support, and aircraft and missile control. The typical MAW includes a headquarters squadron, four aircraft groups of helicopter and fighter/attack aircraft squadrons, and several support units (see Tables 5A2A and 5A2B).
- C. Force Service Support Group (FSSG). The three active FSSG's consist of combat service support units assignable as elements of Marine ground or Marine air/ground task forces. The units thus assigned normally augment units of similar function in the force. Personnel units include engineer, supply, motor transport, maintenance, landing support, and medical and dental battalions (see Tables 5A3A and 5A3B).
- D. <u>Specialized Forces</u>. Specialized forces (Tables 5A4A and 5A4B) consist of a wide variety of combat support units assignable as elements of Marine ground and Marine air/ground task forces (see chapter 6)
- 2. Section A provides cost factors and other data concerning the personnel and equipment assigned to the active FMF organizations discussed above.
- 3. The table of organization (T/O) for a given type organization may vary among FMF commands. In cases of this nature, the applicable T/O within FMFLANT was used as a "standard."

*NOTE: Standard organizations and detachments thereof are used to form the task-organized forces discussed in chapter 6.

MARINE CORPS COST FACTORS MANUAL

CHAPTER 5

STANDARD ORGANIZATIONS

SECTION A: PERSONNEL AND EQUIPMENT COSTS

5100. <u>INTRODUCTION</u>

1. This section provides data concerning the number and cost of personnel associated with each type of FMF organization. Each of the broad categories of FMF organizations has two tables, one for personnel costs and one for equipment costs, as shown below:

	<u>Category</u> <u>Table</u>
Α.	Marine Division (MARDIV) Personnel
В.	Marine Aircraft Wing (MAW) Personnel
C.	Force Service Support Group (FSSG) Personnel
D.	Specialized Forces Personnel

Each table begins with a summary of data for the overall organization and/or principal subordinate units. In each case, the summarized data is followed with detailed data for lower level units down to the company, battery or squadron. In some cases, lower level data is generally maintained and is therefore not provided. If it is necessary to secure this data, it may be requested from the structure sponsor (OPR - indicated in each table) on a case by case basis. Following each unit designator, information is provided as to the number of each unit assigned to the next higher organizational level by T/O's and the number of such units presently assigned. The footnotes on each table provide additional detail.

2. Two sets of personnel figures are provided: one based on the T/O for each of the type organizations and the other based on typical manning strength in the recent past. In some cases, lower level personnel data is not ordinarily maintained and is therefore not provided. If it is necessary to secure this

data, it may be requested from the structure sponsor.

3. The equipment costs shown are for end items listed in the tables of equipment (T/E's) of the unit listed in the applicable table.

5-5

4. The tables contain equipment data relative to notional Marine divisions, Marine aircraft wings, force service support groups, and specialized force units.

5101. DATA USE. The data in this section can be used in a wide variety of costing applications concerning personnel, force structure, and equipment.

5-6

TRBLE SATA. -- KARINE SIVISION PERSONNEL COSPS (9790 5000)

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14565	1	44410	39	587	- 3	56	10,173	12,000				1	* W	53
J-19180 C -	1	Light	- 3	515	1	3	\$4,797	56				1	46	62
LNI CO	5	442.90	5	-37	3	3	12,767	¥				2	10	50

THELE SAIA. -- MAKINE DIVISION PERSONNEL COSTS (FESC 9000)

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- 1/ Principal type organizations are listed starting at left margin; subordinate-type organization of units, if any, are indented. Personnel numbers and costs for subordinate organizations apply to a single organization.
- 2/ Based on T/O dated January 1990, plus authorized contingency billets. In cases where there are two or more T/O for a given type organization, the more representative (or average) data are provided.
- 3/ Based on FY-90 average man-year rates from the President's FY-90 Budget Submit: MC officer \$59,116, MC enlisted \$24,971, N officer \$63,761, N enlisted \$27,408.
- 4/ This column indicates the typical strength at which each type organization is presently manned. Strength figures for companies and batteries are not ordinarily maintained and are therefore not provided.
- 5/ Data reflects M198 artillery organization.

Data Sources: Based on T/O, dated January 1990, the President's FY-90 Budget Submit, and the Marine Corps logistics Management Information System.

OPR: T/O Information CG MCCDC (WF11B), Phone (703)640-3245, AUTOVON 278-2709 T/E Information CG MCRDAC (LPP-4), Phone (703) 696-0900, AUTOVON 226-0900

TABLE SAIR - MARINE COMES DIVINION INDUMENT COMES (FEST \$000)

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15 89101)	41120	Fxx,8/2	\$1,405	522,523
44 CO. 1537		e izi	17, 101	\$157	25, 21,3
IH- FF	3	£ 171	40,757	-244	44, 575
F E 4 3:		1112	94,372	515.	24 1975
MERCORS CD		0.172	\$2,117	47	24, 493 42, 185
BIFLS CO	2	41176	45.1	191	F573
147 RD67		41170	420,712	F1 723	r95,435
.M. (; 4-11		81141	410,570	51.50	511,117
IP- 15	3	H:1.71	56.577	4277	45,102
1 5 3 00	:	H1177	36 737	P1 58	F4, 4.9
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rbir ba (Lay)'	,	1227)	M25, 557	4548	286,175
42.4065	1	r55.2	74,565	900	47,453
15 (HK F7) (9[E1 (1)	2	12275	57,156	365	47,341
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ealings (technic		P55.1	521,390	4275	425,445
M DIFT	!	b7779	\$5,375	*14>	45.212
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gram e ividil	1	F5581	by was	354	* **
ASSIT MARK NA	1	178.50	5175,742	5522	\$105,203
♠ ≤ 5 €e	1	4 (62)	•13,716	E717	412.255
ASUR AND CO	,	4 10 22	422,024	412.	\$17,035
140 14	1	1720	M3,744	9477	965,722
4 Å 🕸 12		41721	847,517	3195	475, 30
NEW WAY		4.00	627,750	474	434, 444
-31 CO	7	4,2%	\$ 0.655	[5]	22, 9.9
CONTACT EASE OF	•	40000	\$10.795	7872	525,126
1 & S L.	_	41361	\$1.574	F/2	\$7,000
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1/25 64	1	F 1920	5100,590	\$274	\$190,77.
1552	!	P 1255	517,619	\$170	\$17,000
ANTO TANK ED	!	64727	• 1), 174	E	X13.299
-esc co	•	11750	27,521	*47	\$17.975
10040 144 (148 (144 5104	5		2577,070	\$7,195	数37° 886

5-9

TABLE 5A1B.--MARINE CORPS DIVISION EQUIPMENT COSTS (FY90 \$000)--CONTINUED.

- 1/ Principal-type organizations are listed starting at the left margin; subordinate-type organizations or units, if any, are indented.
- 2/ The Unit Factor column shows the number of such organizations assigned to the next higher organization by Table of Organization (T/O). Personnel numbers and costs for subordinate organizations apply to the unit to which it

belongs.

- The unit equipment category represents the total value of the unit's table of equipment (T/E), including individual (782 gear, personal weapons etc.) and organizational (vehicles, crew weapons etc.) equipment which was purchased with Marine Corps Appropriations. The figures in the column are the aggregate of the FY90 replacement value of each item of equipment, plus the cost of outfitting each person in the unit with individual equipment and weapons (FY90 cost is \$779 per person). The cost of individual weapons can be determined by multiplying the number of personnel in a units T/O by the (FY90) initial outfitting cost of \$779. Yearly upkeep is reflected in the maintenance of individual equipment column.
- 4/ The maintenance of individual equipment column was derived by multiplying the number of personnel in a units T/O by the FY90 yearly upkeep figure (\$448).
- 5/ Total cost of the T/E item is for a single notional organization or unit (e.g., one infantry regiment, one infantry battalion, or one rifle company). Organizations are based on current structures within the 2nd Marine Division.
- 6/ Data reflects M198 artillery organizations.

Data Sources: Based on T/O, dated January 1990, the
President's FY1990 Budget Submit, and the Marine
Corps Logistics Management Information System.

TABLE SARA: - MARINE MIRCHART WING PERSONNEL CONTROL (1990 - 0000)

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- 1/ Principal-type organizations are listed starting at left
 margin; subordinate-type organizations or units, if any,
 are indented. Personnel numbers and costs for subordinate
 organizations apply to a single organization. As a MAW is
 task organized, it has no set T/O. Accordingly, the units
 shown are listed at their respective T/O strengths.
- 2/ Based on T/O dated January 1990, plus authorized contingency billets. In cases where there are two or more T/O for a given type organization, the more representative (or average) data are provided.
- 3/ Based on FY90 average man-year rates from the President's FY90 Budget Submit: MC officer \$59,116, MC enlisted \$24,971, N officer \$63,761 N enlisted \$27,408.

5-11

4/ This column indicates the typical strength at which each type

organization is presently manned. These columns are zero because MAW's are task organized, have no set T/O, and are manned in accordance with mission requirements. The term "notional wing" is used for planning purposes and describes a Marine air ground task force aviation combat element. It should be noted that fiscal constraints do not permit sufficient active force units for three notional wings.

Data Sources: T/O : based on FY90 Table of Manpower requirements
Cost : based on the January 1990 FY90 President's

Dudget Cubmit

Budget Submit

OPR: T/O information - CMC (ASM) Phone (703) 614-1392, AUTOVON 224-1392

TABLE SA2B. - MARTHE ATROGATS DYNG (MAG) KQLIDNIAD KXSC (FYSC - SCCO)

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1/ Principal - type organizations are listed starting at left
margin; subordinate-type organizations or units, if any, are
indented. Personnel numbers and costs for subordinate
organizations apply to a single organization. The MAW has no
T/O or T/E, as it is task organized. It is made up of
subordinate units configured so as to best accomplish the
mission. Accordingly, the T/E numbers shown represent the
equipment that would accompany that unit, were it to deploy
as part of a MAW.

- 2/ The unit equipment category represents the total value of the table of equipment for that unit purchased with Marine Corps Appropriations (so called "Green Dollars"). These data were derived by multiplying the number of each item of equipment listed in a given T/E by the standard unit price (i.e., cost at last purchase) and summing the subtotals. total includes both organizational T/E items (such as vehicles, crew served weapons, etc.) and individual equipment (such items as 782 gear and individual weapons). The FY90 cost of individual equipment as reflected in the table, is \$779 per person for initial outfitting. Yearly upkeep cost is \$448 per person thereafter. Accordingly, the numbers reflected here are computed using the following formula: \$779 x the number of personnel assigned to each unit (see Table 5A2A - Marine Aircraft Wing Personnel) plus the aggregate total of the units organizational equipment. Yearly upkeep is reflected in the individual equipment column.
- 3/ The individual equipment category represents the yearly upkeep cost of individual equipment (such as 782 gear and individual weapons). It was derived by multiplying the number of personnel contained in the units Table of Organization by the FY90 yearly upkeep factor of \$448.
- 4/ Represents the average total procurement cost of the current state-of-the-art aircraft. TAC/A, FAC/A, and RECCE assets are being replaced by the F/A-18D. The A-6E's will also be replaced by the F/A 18D. This cost includes the cost of the aircraft plus airframe, engine and avionics ground support equipment, training, publications costs, and initial spares. The figures in this column represent the aggregate "cost" of a single squadron of that particular aircraft equipped at the FY90 level. Aircraft for a "notional wing" are as follows:

60 AV-8	(FY90/91)	16 F/A-18D (FY91)	60 CH-46E
			(FY90/91)
20 A-6E	(FY90)	6 EA-6B (FY90/91)	48 CH-53D/E
			(FY90/91)
10 A-6E	(FY91)	12 KC-130 (FY90/91)	24 AH-1W
			(FY90/91)

48 F/A-18A/C (FY90/91) 12 OV-10 (FY90/91) 24 UH-1N (FY90/91) 8 F/A-18d (FY90)

- 5/ These figures represent the aggregate cost of the type squadron listed times the total number of squadrons contained in a "notional" Marine Aircraft Wing.
- 6/ The Marine Tactical Air Command Squadron (MTACS) is a newly formed unit that has not been assigned a T/E yet. Its equipment is funded under the MACG Headquarters.
- 7/ In the MACG, cost includes four MATCUS detachments (T/E 8642) consisting of surveillance radar, precision radar, control tower and navigation aids and a Headquarters unit (T/E 8641).
- 8/ In the MWCS, cost includes one Headquarters unit (T/E 8652), two MWCS detachments (T/E 8652), and two MWCS units (T/E 8653).
- 9/ In the MASS, cost includes one Headquarters unit (T/E 8661) and two detachments (T/E 8662).
- 10/ In the WSG, cost includes four mobile meteorological facilities/vans per wing and Expeditionary Airfield Equipment (EAF). The EAF consists of matting, arresting gear, lighting, FLOLS and accessories.
- 11/ Mobile Facilities (MF's) and Aviation Ground Support Equipment costs are reflected in MAG HQ to distinguish from aircraft costs of squadrons.
- 12/ Derivative of parent T/O.
- 13/ Annotated communities (VMA and VMA(AW)) require one additional squadron for level loading across all three MAWs.
- Data Sources: Based on T/O, dated April 1989, the President's FY90/91 Budget Submit, and the Marine Corps Logistics Management Information System, CMC Central Reference Materiel Library (SAZA), and FY90/91 President's Budget Estimate (Aircraft Data Sheet).
- OPR: T/O CMC (ASM), Phone (703) 614-1392, AUTOVON 224-1392 T/E - USMC Funded - CMC (LPP-4), Phone (703) 696-0900, AUTOVON 226-0900 USN Funded - CMC (APP-41), Phone (703) 696-2261, AUTOVON 226-2261

5-15

(see a no committee today) (THEOSIAL STROKEN) LSMC DEAC AWAY BANY PARENT CLOT C echt ; wich wich jose a raic ri ove est jose on ्राज्याची १४० (१६८७६) सः the countricial LARC IDE: MYCT THE EAL OVE WAY M 2 8 N 900,00 10,576 517,25 33,2 1 317,15 484 107,656 80 79" le B1 1,455 ΙŦ 1/6 1,266 13 α \$45,505 \$2,886 511H 112He 113He \$ 421 439 361 16 91 SAT ON LOW ON P) 40 P 3: LATER ÷ 4,5 741,439 36,177 76,772 36,710 80,760 ROCKE AN 190% 2.1,20 ***** 27.00 o∸ 1,566 σ 0 | 5/2,589 × FESON SON HAND IL 1,529 lb 1722 lb 10 938 258 710 10 20 MATERIAL TO ELECT HIGHT TO ME MAINT LL 325 lk 325 lk 326 lk #) 10 10 FIT A.5 98,174 15 e/With 56 1,92 16 - 226 N. 165,650 30,791 12,575 SUPPLY EL 39416 32 351,900 \$1,005 54 1,160 4650 33214 33214 33316 eté (3) Meto CO 917,910 \$10,951 ۵. ا . 5년 £!II ■DIGE SALO 334 lb 111 47,187 F97 30B F4 3 :: 4729 38794 5 Ħ. 941,858 37,538 11 1,399 0.477,246 41 4 a 5 C) 44# 361 as 36116 V259 254 4777 575,016 67,762 57,587 67,665 500 7. 15 3 TRIDGE CO 24214 5 34534 126 07 SW2 5 *15,80 P,907 B),974 B),974 DOMESTIC SALES 90.0 **%**3 0 902,067 27 231 50 19 291°4 282 A 152 770 .a macarr ca : ŝ eği opt od Junding met no 2521H 7557H 300 64 ٥ 0 a νİ F1,825 29554 16444 4674 77 ATRIUS 24 445 ń ٥į 876,678 rı j X7L 1 121,625 50 242 250 154 P6.612 19,525 161,161 200 2 2987

5832. -- 90803 SERVICE SUPEGRADOR (1988) POWERFUL (1987). (1990 - SOCH)

SABA. -- FORCE SURV. DR SUPPORT GROUP (1986) PLICKYN G. CDSTS (FY90 - \$400)

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- 1/ Principal-type organizations are listed starting at left
 margin; subordinate-type organizations or units, if any, are
 indented.
- 2/ The unit factor column is the number of such organizations

assigned to the next higher organization by T/O.

- 3/ Based on T/O dated January 1990, plus authorized contingency billets. In cases where there are two or more T/O for a given type organization, the more representative (or average) data are provided. Strength figures for companies and batteries are based on a pro rata distribution of the respective parent battalion's manning level.
- 4/ These numbers reflect the personnel cost of the unit at T/O strength. They are based on FY90 average man-year rates from the President's FY90 Budget Submit: USMC officer \$59,116, USMC enlisted \$24,971, USN officer \$63,761, USN enlisted \$27,408. Personnel numbers and costs for subordinate organizations apply to a single organization. These costs for parental units are aggregate totals of the subordinate units.
- 5/ This column indicates the typical strength at which each type organization is presently manned. Strength figures for companies and batteries are not ordinarily maintained and are therefore not provided.
- 6/ Navy typical strength breakdown by company not available.
- 7/ These numbers reflect the personnel cost of the unit as staffed at typical strength. They are based on FY90 average man-year rates from the President's FY90 Budget Submit: USMC officer \$59,116, USMC enlisted \$24,971, USN officer \$63,761, USN enlisted \$27,408. Personnel numbers and costs for subordinate organizations apply to a single organization. These costs for parental units are aggregate totals of the subordinate units.

Data Sources: Based on T/O, dated January 1990, the President's FY90 Budget Submit, and the Marine Corps Logistics Management Information System.

OPR: T/O Information CG MCCDC, Phone (703) 640-3245, AUTOVON 278-2709

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- 1/ Principle-type organizations are listed starting at left
 margin; subordinate-type organizations or units, if any are
 indented.
- 2/ The Unit Factor column shows the number of such organizations assigned to the next higher organization by Table of Organization (T/O). Personnel numbers and costs for subordinate organizations apply to the unit to which it belongs.
- 3/ The unit equipment category represents the total value of the unit's table of equipment (T/E), including individual (782 gear, personal weapons etc.) and organizational (vehicles, crew weapons etc.) equipment which was purchased with Marine Corps Appropriations. The figures in the column

are the aggregate of the FY90 replacement value of each item of equipment, plus the cost of outfitting each person in the unit with individual equipment and weapons (FY90 cost is \$779 per person). The cost of individual weapons can be determined by multiplying the number of personnel in a units T/O by the (FY90) initial outfitting cost of \$779. Yearly upkeep is reflected in the maintenance of individual equipment column.

- 4/ The maintenance of individual equipment column was derived by multiplying the number of personnel in a units T/O by the FY90 yearly upkeep figure (\$448).
- 5/ Total cost is the sum of unit cost (column 4) and individual cost (column 5) times the number of units in the current manning level (the second number in column 2, units required).

Data Sources: Based on T/O, dated January 1990, the President's FY90 Budget Submit, and information contained in the Marine Corps Logistics Management Information System.

OPR: T/O Information CG MCCDC (WF11B), Phone (703) 640-3245, AUTOVON 278-2709

T/E Information CG MCRDAC (LPP-4), Phone (703) 696-0900, AUTOVON 226-0900

S24A. - SPECIALIZED FORCES PERSONNEL COSTS (7190 - 9000)

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- 1/ Principal-type organizations are listed starting at left
 margin; subordinate-type organizations or units, if any,
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- 2/ The unit factor column is the number of such organizations

assigned to the next higher organization by T/O.

- 3/ Based on T/O dated January 1990, plus authorized contingency billets. In cases where there are two or more T/O for a given type organization, the more representative (or average) data are provided. Strength figures for companies and batteries are based on a pro rata distribution of the respective parent battalion's manning level.
- 4/ These numbers reflect the personnel cost of the unit at T/O strength. They are based on FY90 average manyear rates from the President's FY90 Budget Submit: USMC officer \$59,116, USMC enlisted \$24,971, USN officer \$63,761, USN enlisted \$27,408. Personnel numbers and costs for subordinate organizations apply to a single organization. These costs for parental units are aggregate totals of the subordinate units.
- 5/ This column indicates the typical strength at which each type organization is presently manned. Strength figures for companies and batteries are not ordinarily maintained and are therefore not provided.
- 6/ Navy typical strength breakdown by company not available.
- 7/ These numbers reflect the personnel cost of the unit as staffed at typical strength. They are based on FY90 average man-year rates from the President's FY90 Budget Submit: USMC officer \$59,116, USMC enlisted \$24,971, USN officer \$63,761, USN enlisted \$27,408. Personnel numbers and costs for subordinate organizations apply to a single organization. These costs for parental units are aggregate totals of the subordinate units.

Data Sources: Based on T/O, dated January 1990, the President's FY90 Budget Submit, and the Marine Corps Logistics Management Information System.

OPR: T/O Information MCCDC (WF11D), Phone (703) 640-3321, AUTOVON 278-3321 T/E Information MCRDAC (LPP-4), Phone (703) 696-0899, AUTOVON 224-0899

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- 1/ The organizations listed herein represent units under the direct operational control of FMF commanders. Costs are in thousands of dollars.
- 2/ Principal-type organizations are listed starting at left
 margin; subordinate-type organizations or units, if any,
 are indented. Personnel numbers and costs for subordinate
 organizations apply to a single organization.
- 3/ The Unit Factor column shows the number of such organizations assigned to the next higher organization by Table of Organization (T/O). Personnel numbers and costs for subordinate organizations apply to the unit to which it belongs.
- The unit equipment category represents the total value of the unit's table of equipment (T/E), including individual (782 gear, personal weapons etc.) and organizational (vehicles, crew weapons etc.) equipment which was purchased with Marine Corps Appropriations. The figures in the column are the aggregate of the FY90 replacement value of each item of equipment, plus the cost of outfitting each person in the unit with individual equipment and weapons (FY90 cost is \$779 per person). The cost of individual weapons can be determined by multiplying the number of personnel in a units T/O by the (FY90) initial outfitting cost of \$779. Yearly upkeep is reflected in the maintenance of individual equipment column.
- 5/ The maintenance of individual equipment column was derived by multiplying the number of personnel in a units T/O by the FY90 yearly upkeep figure (\$448).
- 6/ Total cost is the sum of unit cost (column 4) and individual cost (column 5) times the number of units in the current manning level (the second number in column 2, units required).

Data Sources: Based on T/O, dated January 1990, the President's FY90 Budget Submit, and the Marine Corps Logistics Management Information System.

OPR: T/O Information MCCDC (WF11D), Phone 640-3321,

AUTOVON 278-3321

T/E Information MCRDAC (LPP-4), Phone (703) 696-0900,

AUTOVON 226-0900

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 6

NOTIONAL TASK FORCES

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SECTION	B: MARINE AIR/GROUND TAS	K FORCES (MAG	rf's)
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MARINE CORPS COST FACTORS MANUAL

CHAPTER 6

NOTIONAL TASK FORCES

6000. GENERAL

1. This chapter provides cost data pertaining to task forces. Such factors are formed from available Fleet Marine Force (FMF) resources as combat or training missions dictate. These specially tailored organizations fall into two categories:

- A. Marine Ground Task Forces
- B. Marine Air/Ground Task Forces (MAGTF's)
- 2. Section A provides data concerning the various types of ground task forces. Section B does the same for MAGTF's.
- 3. Data for the basic Marine Corps units which comprise task forces can be found in chapter 5.

6-3

MARINE CORPS COST FACTORS MANUAL

CHAPTER 6

NOTIONAL TASK FORCES

SECTION A: MARINE GROUND TASK FORCES

6100. <u>INTRODUCTION</u>

- 1. Ground task forces are formed to facilitate the assault landing of ground combat units. There are two types:
- a. Battalion Landing Teams (BLT's). A BLT is the basic combat unit for planning an assault landing. It consists of an infantry battalion reinforced by necessary combat support and combat support and combat service support elements to accomplish a given assault landing mission.
- b. Regimental Landing Teams (RLT's). An RLT is normally formed when combat strength somewhat greater than a BLT is desired. An RLT normally consists of an infantry regiment reinforced by the necessary combat support and combat service support elements required to facilitate assault landings. The ground combat element of the RLT is task organized and is usually composed of two to five battalions.
- 2. Tables 6A1 and 6A2 provide data concerning typical BLT's and RLT's, respectively.
- 6101. <u>DATA USE</u>. The personnel costs of a notional task force can be used in a broad variety of planning and evaluation techniques relating to task force analysis.

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- 1/ A BLT normally consists of the ground combat element of the Marine Expeditionary Unit (MEU). All costs are in thousands of dollars. Totals may not add due to rounding.
- 2/ Based on FY90 annual workyear rates of \$59,116 and \$24,971 for USMC officers and enlisted respectively.
- 3/ Based on FY90 annual workyear rates of \$63,761 and \$27,408 for USN officers and enlisted, respectively.
- 4/ The prescribed allowance of equipment for an organization. This includes both unit and individual equipment, plus a \$448 yearly individual equipment maintenance cost.

Data Sources: HQMC Logistics Management Information System data base; FY90 Workyear Averages from the President's FY90/91 Budget

640-3133, AUTOVON 278-3133

Equipment Info - MCRDAC (LPP-4), Phone (703) 696-0900,

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- 1/ An RLT normally consists of the ground combat element of a Marine Expeditionary Brigade (MEB). Like an MEB, the RLT is task-organized, and as such the composition will fluctuate in accordance with the requirements of the mission. All costs are in thousands of dollars. Totals may not add due to rounding.
- 2/ Based on FY90 annual workyear rates of \$59,116 and \$24,971 for USMC officers and enlisted, respectively.
- 3/ Based on FY90 annual workyear rates of \$63,761 and \$27,408 for USN officers and enlisted, respectively.
- 4/ The prescribed allowance of equipment for an organization. This includes both unit and individual equipment, and a \$448 individual equipment maintenance cost.
- 5/ Based on T/O strength for a three infantry company, three infantry battalion regiment.

- 6/ A reinforced unit is the basic unit plus any attachments the commander may feel is required. These units are costed based upon the composition of the units in an MEU. That portion of the unit which above its T/O, is costed as a percentage of the attachments parent T/O.
- 7/ Based on the T/O structure for the unit.
- 8/ A detachment could be any subset of a unit which could provide a combat or combat support capability. These units are costed at a "notional" detachment level as a percentage of their parent T/O.

Data Sources: HQMC Logistics Management Information System data base; FY90 Workyear Averages from the President's FY-90/91 Budget.

OPR: Personnel Info - Ground: CMC (POG), Phone (703) 614-2505, AUTOVON 224-2505 Air: CMC (ASM), Phone (703) 614-1392,

AUTOVON 224-1392

Support: CMC (LPM), Phone (703) 614-2473,

AUTOVON 224-2473

Equipment Info - CMC (LMO-3), Phone (703) 614-5394, AUTOVON 224-5394

6-7

MARINE CORPS COST FACTORS MANUAL

CHAPTER 6

NOTIONAL TASK FORCES

SECTION B: MARINE AIR/GROUND TASK FORCES (MAGTF'S)

6200. <u>INTRODUCTION</u>

- 1. MAGTF's are FMF organizations mission-tailored for the conduct of closely integrated air and ground operations. MAGTF's typically consist of the following elements:
 - a. A command element
 - b. A ground element
 - c. An aviation combat element
 - d. A combat service support element (including units of the Navy).
- 2. There are three types of MAGTF's:

- a. Marine Expeditionary Unit (MEU). A MEU generally includes a BLT, a composite squadron and a MEU service support group. The squadron is normally limited to helicopters, although fixed-wing attack and observation aircraft could be assigned.
- b. Marine Expeditionary Brigade (MEB). A MEB usually includes an RLT, a Marine aircraft group (MAG), and a MEB service support group. The MAG typically contains Marine fixed-wing attack, helicopter transport, and antiair warfare capabilities.
- c. Marine Expeditionary Force (MEF). A MEF normally includes a reinforced Marine division, a Marine Aircraft Wing (MAW), and a force service support group.
- 6201. DATA USE. The personnel and equipment supply cost of a notional task force can be used in a broad variety of planning and evaluation techniques relating to task force analysis.

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1/ A MEU is task organized to meet the requirements of the mission(s) and geographical area. Accordingly, there is no set organizational structure. A "notional" MEU is provided here, and data provided is intended for use in very broad estimates only. Accordingly, this data must be used with caution and should be qualified before given out. All costs are in thousands of dollars. Totals may not add due to rounding.

- 2/ Based on FY90 annual workyear rates of \$59,116 and \$24,972 for USMC officers and enlisted, respectively.
- 3/ Based on FY90 annual workyear rates of \$63,761 and \$27,408 for USN officers and enlisted, respectively.
- 4/ The prescribed allowance of equipment for an organization. This includes both unit and individual equipment, and includes a \$448 yearly individual maintenance cost. For detachments, the equipment is costed as a percentage of the total value of the parent unit's T/O, based upon the number of personnel in the unit. Reinforced units are costed by taking a percentage of the value of the reinforcement's parent T/O (value of total T/E divided by T/O times the number of personnel in the reinforcing unit) and adding it to the value of the reinforced unit's T/E.

6-9

- 5/ May be reinforced with 6 AV-8B (T/0# 8860T 9 Marine Corps enlisted, and 1 Navy enlisted).
- 6/ The detachments that make up the MEU are costed as a percentage of their parent T/O, based upon the number of personnel in an attachment. As a detachment may be any size, a nominal size has been used, based upon a "normal" detachment size.
- 7/ Derivative of parent unit T/O
- 8/ Reinforced units are composed of the basic unit plus any attachments, and are costed with the attachments.

Data Sources: HQMC Logistics Management Information System data base; FY90 workyear Averages from the President's FY90/91 Budget

OPR: Personnel Info - Ground: CG, MCCDC (WF11B) Phone

(703)640-3133 AUTOVON 278-3133

Air: CMC (ASM), Phone

694-1392

AUTOVON 224-1392

Support: CG, MCCDC (WF11b), Phone

(703)640-3321

AUTOVON 278-3321 Equipment Info - CG, MCRDAC (LPP-4), Phone (202)696-0900 AUTOVON 226-0900

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THEOLOGOUS. SOSTORAL MANY WE REPORT BEFORE (MEET) RESOURCE GRADS †

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the same as a first take take		wa.	, 15	72	- 2	' '	21,734	¥27	*496

- 1/ A Marine Expeditionary Brigade is task-organized to accomplish a specific mission/perform in a given geographical area; therefore, a MEB is not standard. For contingency planning purposes, a "notional" MEB is used. There are two types, the Maritime Prepositioned Ship (MPS) MEB and the amphibious MEB. The MPS MEB would deploy by air and marry up with the equipment aboard the MPS ships. An Amphibious MEB is a force with it's T/E equipment that would normally deploy by ship. The MEB presented here is based on the "notional" amphibious MEB. Because the information provided is based upon contingency planning, the cost data provided is intended to only be used in very broad planning scenarios. It is not intended to provide definitive costs. All costs are in thousands of dollars. Totals may not add due to rounding.
- 2/ Based on FY90 annual workyear rates of \$59,116 and \$24,971
 for USMC officers and enlisted, respectively.

- 3/ Based on FY90 annual workyear rates of \$63,761 and \$27,408 for USN officers and enlisted, respectively.
- The prescribed allowance of equipment for an organization. This includes both unit and individual equipment and a \$448 individual equipment maintenance cost. Equipment costs are based upon the total T/E of a given unit. Units that are reinforced are costed by including a percentage of the value of the attachment's parent's T/E, based upon the number of personnel (attached units parent T/E divided by parent T/O times the number of personnel in the attachment). Detachments are likewise costed as a percentage of the value of the parent's total T/E, determined the same way as attachments. Since the size of the detachment is determined by the mission requirements of the unit it is attached to, the detachments shown here represent a "notional" detachment, based upon past practices with detachments of a given type.

Data Sources: HQMC Logistics Management Information System data base; FY90 Workyear Averages from the President's FY90/91 Budget; T/O dated April 89

OPR: T/O Information - CMC (MPC) Phone (703) 614-8381, AUTOVON 224-8381

T/E Information - USMC funded - CMC (LPP-4) Phone (703) 696-0900, AUTOVON 226-0900

USN funded - CMC (APP-41) Phone (703) 614-2261, AUTOVON 224-2261

Табли 662д, — империях очисовоторожно восимова модили октиватительну деперава (има имп χ^{\pm} (има обор)

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1/ A Marine Expeditionary Brigade is task-organized to accomplish a specific mission/perform in a given geographical area. A MEB is not standard. For contingency planning purposes, a "notional" MEB is used. There are two types, the Maritime Prepositioned Ship (MPS) MEB and the amphibious MEB. The MPS MEB represents a MEB that would deploy by air and marry up with the equipment aboard the MPS ships. An Amphibious MEB consists of a force with its T/E equipment that would normally deploy by ship. The MEB presented here is based on the "notional" MPS MEB. Because the information provided is based upon contingency planning, the cost data provided is intended to only by used in very broad planning scenarios. It is not intended to provide definitive costs. All costs are in thousands of dollars. Totals may not add due to rounding.

- 2/ Based on FY90 annual workyear rates of \$59,116 and \$24,971 for USMC officers and enlisted, respectively.
- 3/ Based on FY90 annual workyear rates of \$63,761 and \$27,408 for USN officers and enlisted, respectively.
- The prescribed allowance of equipment for an organization. This includes both unit and individual equipment. Equipment costs are based upon the total T/E of a given unit. Units that are reinforced are costed by including a percentage of the value of the attachment's parent's T/E, based upon the number of personnel (attached units parent T/E divided by parent T/O times the number of personnel in the attachment). Detachments are likewise costed as a percentage of the value of the parent's total T/E, determined the same way as attachments. Since the size of the detachment is determined by the mission requirements of the unit it is attached to, the detachments shown here represent a "notional" detachment, based upon past practices with detachments of a given type.
- 5/ Miscellaneous material is loaded on board the MPS to support the MEB as a whole. It is not unit specific and may or may not be purchased with Marine Corps appropriations. In each case listed, the Service appropriation used to purchase the material is specified (USMC, USN, etc.).

6-20

MARINE CORPS COST FACTORS MANUAL

DATA SOURCE: Based on T/O, dated April 1989; the President's FY90/91 Budget Submit; the Marine Corps Logistics Management Information System, and CMC Central Reference Material Library

OPR: T/O Information - CMC (Code MPC) Phone (703) 614-8381 T/E Information - USMC funded - CMC (LPP-4) Phone (703) 696-0900, AUTOVON 226-0900

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- 1/ The structure depicted is a "Notional" Marine Expeditionary
 Force; for continuity, the structure of the Second Marine
 Division has been used.
- 2/ Principle-type organizations are listed starting at the left margin; subordinate-type organizations or units, if any, are indented.
- 3/ Based on FY-90 annual composite workyear rates for USMC officers \$59,116 and enlisted \$24,971.
- 4/ Based on FY-90 annual workyear rates of USN officers \$63,761 and enlisted \$27,408.
- 5/ The prescribed allowance of equipment for an organization includes both unit and individual equipment procured with Marine Corps funds. It does not include equipment procured with Navy appropriations. It also includes annual maintenance cost for individual equipment (\$448 per set).
- 6/ Organization of a MEF and its composition is mission dependent, and units are assigned to the various landing echelons at the discretion of the Commander. This table presents a notional MEF with no consideration being given to which landing echelon a unit may be assigned.
- 7/ The Second SRI Group is used as the "norm". Because a MEF and an SRI Group are task-organized, and the SRI Group's provides intelligence data to the commander, the entire SRI Group is included.
- 8/ Aviation unit Table of Equipment costs do not include the cost of equipment procured with Navy Appropriations ("Blue Dollars"). See Table 5A2B for blue dollar costs.
- 9/ The Marine Air Control Squadron is shown at the planned manning level of 23/237, vice the T/O of 30/186.
- 10/ These naval forces are not formally a part of the MEF but would be assigned in support.
- 11/ Includes Det, FLTCDRGRU, UDT, SEALS, EOD, SAR, AMDM and

medical personnel.

Data Sources: HQMC Logistics Management Information System data base (Equipment Allowance File and Item Data File) dated July 1990; FY90 Workyear Averages from the President's FY90 Budget; Table of Manpower Requirements for FY90; the FY 1990 Troop List

OPR: Personnel Info - Ground - Combat Element: MCCDC (WF),
Phone (703) 614-2505, AUTOVON 224-2505
Air: CMC (ASM), Phone 614-1392, AUTOVON 224-1392

Support: CMC (LPM), Phone (703)

614-1932, AUTOVON 224-2473

Equipment Info - CMC (LMO-3), Phone (703) 614-5394, AUTOVON 224-5394

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 7

COST COMPARISONS AND PROJECTIONS

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INTRODUCTION	7200	7-10
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MARINE CORPS COST FACTORS MANUAL

CHAPTER 7

COST COMPARISONS AND PROJECTIONS

7000. GENERAL

- 1. This chapter provides data pertaining to cost comparisons and projections. Such analyses are often complex because, to be complete and accurate, the element of time must be considered. For example, price changes due to inflation (or deflation), the charge for the use of money (e.g., interest), and investment payback (i.e., return on investment) are all related to the passage of time.
- 2. The information here is presented in two sections as follows:
- A. Cost Adjustments (for deflation/inflation and the time value of money).
 - B. <u>Investment Payback</u>.

The characteristics and specific use of the data is included in each section. Footnotes on data formulation, sources, and OPR are included with each table, as appropriate.

3. For further information and guidance on cost analysis, consult the current edition of MCO 7000.12, Economic Analysis, and related DoD and DON directives.

7 - 3

MARINE CORPS COST FACTORS MANUAL

CHAPTER 7

COST COMPARISONS AND PROJECTIONS

SECTION A: COST ADJUSTMENTS

7100. <u>INTRODUCTION</u>. The cost adjustment factors contained in this section pertain to inflation and the time value of money. These factors were developed and refined by economists, accountants, statisticians, and financial analysts to account for time-related phenomena which should be considered in cost analyses. They are important considerations because time has monetary value, usually expressed in terms of percentage rates of return or interest rates.

7101. DATA USE

- 1. Table 7A1, Cost Deflators/Inflators
 - a. This table is used to adjust cost figures in different

years for the effects of inflation. These deflators and inflators apply to cost figures which reflect funds available for programming in a given year (i.e., total obligational authority) as opposed to actual expenditures (i.e., outlays). Since most Marine Corps dollars are expended in 1 year, this difference is usually not significant. However, if precise calculations are needed, especially in areas involving the Procurement, Marine Corps (PMC) and Research, Development, Test, and Evaluation (RDT&E) appropriations, inquiries should be made to the OPR of this table for guidance/help.

- b. The factors in the tables are furnished for major cost components from FY50 through FY94, with FY91 being the base year. Factors are different for the various appropriations because inflation is not constant across the entire economy but varies by sector.
- c. The table can be used in two different ways as
 follows: (NOTE: All years are fiscal years.)
- (1) Converting from base year (1991) cost to any other fiscal year cost. This option is used if the analyst knows the cost of an item in base year dollars and wishes to know that cost expressed in terms of prior or future fiscal year dollars. The procedure involves multiplying the base year cost by the prior or future fiscal year factor in the applicable appropriation column (see Table 7A1).
- (2) Converting from any fiscal year cost (other than base year) to any other fiscal year cost. This option is used if the analyst wishes to compare the real change in costs between two fiscal years other than the base year. For example, O&M service costs for a telecopier were \$400 in FY67 and \$500 in FY75. In order to determine in which year the true cost (adjusted for inflation) is the lower, the comparison may be made in either of the following ways:

- (a) Converting costs to base year dollars. Since the table is already in base year (1991) dollars, this process is the easiest. Divide the 1967 cost by the 1967 factor to get the cost in 1967 dollars. Do the same for the 1975 cost. A comparison of these figures shows the 1975 true cost is less (see Table 7A1).
- (b) Converting cost to other fiscal year dollars. The conversion can be made and expressed in terms of either fiscal year being compared. The mathematical operation is the same in both instances and is illustrated as follows:
 - 1 In 1967 Dollars. To make 1967 the base year

with an index value of 1.000 and to make all other factors expressed in terms of that base year, divide the relevant factors in the table by the 1967 factor. In this example, divide the 1975 O&M dollar conversion factor by the 1967 factor (.4376/.2103 = 2.0808). The result means one O&M dollar in 1967 is the equivalent of about two and one-tenth of the 1975 dollars. The 1975 cost of \$500 should be divided by a conversion factor of 2.0808 for a result of \$240. In other words, the 1975 O&M cost of \$500 expressed in 1967 dollars is \$240, which is \$160 less than the 1967 cost of \$400.

 $\underline{2}$ <u>In 1975 Dollars.</u> The process is exactly the same as the previous example, except you divide by the 1975 factor.

NOTE: Both of the methods described above are valid ways of comparing costs after adjustment for inflation. Each give the same result (i.e., the 1975 cost was cheaper). However to be clear about the amounts involved, the base year must be specified along with the amount.

2. Table 7A2 (Present Value/Discount Factors)

a. This table can be used to remove the effects of the time value of money on costs by reducing cash flows, occurring in different periods, to a common point in time. This applies to flows of actual cash (outlays) and not to items such as appropriations, allocations, or depreciation where no actual cash flow takes place. If the levels of cash flow vary, column A of the table should be used; if cash flow is the same each year, column B is applicable. (Column B is the sum of column A up to and including the "project year." See Table 7A2 for examples.) It is important to note these calculations assume deflated dollars; i.e., with the effects of inflation eliminated. Inflation and the time value of money are separate phenomena.

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- 1/ Base year is FY 1991. The base year can be changed by dividing all the index numbers in the series by the index number of the year the analyst decides to make the base. The introduction to this section explains the use of this table.
- 2/ These indices are DoD averages and not specifically for the Marine Corps.
- 3/ "O&M OTHER" is O&M excluding fuel and civilian pay.

- 4/ These indices are for Marine Corps (or Navy) appropriations specifically.
- 5/ This column is used when the appropriation is not known. Composite factor includes retired pay.
- 6/ The GNP deflator is included for information. It should only be used for items related to the U.S. economy as a whole and which do not fit into appropriation categories.

Note: With the exception of the PMC, all appropriations have components; i.e., pay, POL and purchases, which escalate/inflate at different rates. When costing, the most applicable column, either component or appropriation, should be used.

Data Source: Office of the Comptroller of the Department of Defense, "National Defense Budget Estimates for FY 1991", March 1990. GNP & CPI are taken from Table 5-1, "DoD and Selected Economy Wide Indices." All other indices are taken from Tables 5-4 and 5-5, "Department of Defense Deflators - TOA."

OPR: CMC (Code RPP-5) Phone (703) 614-1503, AUTOVON 224-1503

FARTER TAX - PARSENT VALUE/DISCOUNTED FACTORS 1

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- /1 The factors in this table are based on continuous compounding of interest. A discounted rate of 10 percent is used per SECNAVINST 7000.14b.
- /2 Factors represent an arithmetic average of each year's

respective present value future. This column should be used when funding is different each year.

/3 Factors represent the sum of the factors in Column A through any given project year. This column should be used when funding is the same each year.

TECHNICAL NOTE:

The values in column A were derived as follows:

Factor in project year n=
$$\frac{1}{(1.1)(n)} + \frac{1}{(1.1)(n-1)}$$

The values in column B were derived as follows:

$$(n) 1 + 1$$

Factor in project year n=
$$(1.1)(x)(1.1)(x-1)$$

 $x=1$ 2

Data Source: SECNAVINST 7000.14B

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MARINE CORPS COST FACTORS MANUAL

CHAPTER 7

COST COMPARISONS AND PROJECTIONS

SECTION B: INVESTMENT PAYBACK

7200. <u>INTRODUCTION</u>

- 1. Investment payback pertains to the stream of cash proceeds (i.e., savings) produced by an investment. The payback period is the length of time required for such proceeds to equal the original cash outlay required by the investment. In other words, when the savings/investment ratio is equal to 1.0, all costs (but no more) of an investment have been recovered; the payback period is the length of time required for that to occur.
- 2. The savings/investment ratio is a numerical relationship of future savings (discounted to the present) divided by

investment costs (refer to "Present Value" in the glossary). It is a useful ratio when comparing alternatives because it indicates the effectiveness of additional investment to produce future cost savings.

- 3. The table in this section provides conversion factors regarding savings/investment ratios and discounted payback periods.
- 7201. <u>DATA USE</u>. Table 7B1, Investment Payback, can be used to determine the number of years it would take, on a discounted basis, to recover an investment at various rates of cost effectiveness. For example if it is anticipated the purchase of a vehicle would result in a particular rate of payback (i.e., savings to investment ratio or return on investment), it is possible to determine from the table the number of years it would take before the savings accrued equaled the investment cost. This determination can be made by correlating the given savings to investment ratios, in the left-hand column of the table, with their corresponding discounted payback periods. Refer to Table 7B1 for an illustration of the table's use.
- 7202. ALTERNATIVE METHODS. The concept of net present value (NPV) is sometimes used instead of investment payback. The NPV of a project is the total discounted benefits of a project minus its total discounted costs. The higher the NPV, the more attractive the project. This alternative method and others are discussed in the current edition of MCO 7000.12 and related Department of the Navy and Department of Defense directives.

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1/ This table is based upon a discount rate of 10 percent. It indicates the number of years it would take to recover an investment on a discounted basis over the economic life of the equipment/property at various savings/investment ratios. For example, if it is anticipated the purchase of a vehicle will have a savings-to-investment ratio of 1.5 to 1 (see 1.5 in the left-hand column above) over its 5 year economic life. The discounted payback period would be 3.06 years. The savings accrued in the 3.06 years of use would equal the investment cost.

Data source: Department of the Navy, Economic Analysis Handbook p. 442.

SOURCES OF MARINE CORPS SUPPORT AND FUNDING

- 1. When a cost estimate is being developed or used, it must be remembered the validity and usefulness of the estimate depends upon the parameters under which it is being developed. To ensure a cost estimate is computed and correctly applied, it is essential planners, programmers, and decisionmakers are familiar with each of the following sources of Marine Corps funding and support:
- A. <u>MARINE CORPS APPROPRIATIONS.</u> The Marine Corps receives funds directly from the following appropriations:
- (1) <u>Military Personnel, Marine Corps (MPMC)</u>. Funding provided by the annual MPMC appropriation covers the expense of Permanent Change of Station Moves (PCS), pay and allowances, individual clothing issues, the Government's contribution to the Federal Insurance Compensation Act Program, death gratuities and the apprehension of military deserters, absentees, and escaped military prisoners.
- (2) Reserve Personnel, Marine Corps (RPMC). The annual RPMC appropriation provides for pay, allowances, clothing, subsistence, gratuities, travel, and related expenses for personnel of the Marine Corps Reserve on active duty under 10 U.S.C. 265 or while undergoing Reserve training, drills, or equivalent duty. Also included under this appropriation are the foregoing type expenses as related to the Marine Corps Platoon Leaders and Junior Reserve Officer Training Course (JROTC) programs.
- (3) Operation and Maintenance, Marine Corps (O&MMC). This annual appropriation funds supply and maintenance activities, base telecommunications, training and education, recruiting and advertising, personnel support administration, Marine Corps-furnished field and garrison subsistence, and base operations. Examples of items funded within the O&MMC appropriation include such diverse things as the salaries and fringe benefits of Marine Corps civilian personnel, maintenance of equipment and facilities, utilities, Temporary Additional Duty (TAD), supplies, and the procurement of equipment which is either not centrally managed and/or below the current unit cost dollar limits for Procurement Marine Corps funding.
- (4) Operation and Maintenance, Marine Corps Reserve (O&MMCR). The annual O&MMCR appropriation covers the operation and maintenance of the Marine Corps Reserve. Specifically, it pays for such things as the training, organization, and administration of the Marine Corps Reserve; repair of facilities and equipment; travel and transportation; civilian personnel; and procurement of services, supplies, and equipment.
 - (5) Procurement Marine Corps (PMC). The multiyear PMC

appropriation provides funding for the purchase, delivery, and modification of those investment items which are centrally managed and/or exceed the current unit cost dollar limits for

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O&MMC funding. These items include such things as ammunition, weapons, tracked combat vehicles, guided missiles, communications and electronic equipment, engineering and other support equipment, and spares.

- (6) Family Housing, Appropriation. Since FY83, this appropriation has funded the construction, maintenance, and operation of Government-owned family housing and associated maintenance and personnel support facilities assigned to the Marine Corps.
- (7) Military Construction (MILCON). The MILCON appropriation funds such things as the acquisition of land, construction of facilities valued in excess of \$100,000 and the implementation of public works projects for the Marine Corps. Additionally, funds are provided through this appropriation for the acquisition of naval hospital complexes to serve military personnel and their dependents aboard Marine Corps installations.
- (8) Military Construction, Navy Reserve (MCNR). MCNR supports constructing, acquiring, expanding, rehabilitating, and converting facilities for the training and administration of Marine Corps Reserve components.
- B. <u>Revolving Funds</u>. The Marine Corps is supported by three revolving funds. All three of these funds will be consolidated into the Defense Business Operations Fund (DBOF) in FY 1992.
- (1) Marine Corp Stock Fund (MCSF). The MCSF is used to procure inventories of expense-type items, as contrasted to investment-type items which are furnished by the PMC appropriation. When these items are issued to Marine Corps activities, a charge is made to the operating funds of the receiver and a reimbursement made to the MCSF. Examples of stock fund items are Petroleum, oil, and lubricants (POL) for ground equipment, cleaning supplies, paints, office supplies, and some spare parts. The only exception to the revolving fund aspect of the MCSF is the small amount of funds directly appropriated in recent years for procurement of prepositioned war reserve (PWR) material.
- (2) <u>Marine Corps Industrial Fund (MCIF)</u>. The MCIF provides capital to finance the operations of the overhaul and repair facilities of the Marine Corps Logistics Bases, Albany

and Barstow. The capital is replenished by funds received as a result of periodic billings to customer activities for whom the work was performed. Overhaul and repair charges consist of labor, material, and overhead.

(3) Marine Corps Commissary Trust Revolving Fund (MCCTRF). The MCCTRF is used to pay the expenses of constructing, equipping, and maintaining commissary stores. It is also used to cover the costs of commissary operations except for personnel, which is funded through the O&MMC appropriation. The fund is supported by commissary store profits generated by the sale of store stock derived from MCSF transactions. This fund will be transferred to the Defense Commissary Agency (DeCA) in FY 1992 and further consolidated into the DBOF.

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- C. <u>Nonappropriated Funds</u>. These are generated by Marine Corps nonappropriated fund resale activities such as exchanges, clubs, messes, recreational facilities, and civilian cafeterias. The Marine Corps uses these funds to support morale, welfare, and recreation programs.
- D. <u>Other Appropriations</u>. The Marine Corps receives support from the following non-Marine Corps appropriations:
- (1) Retired Pay, DoD. The retired pay of Regular and Reserve Marine Corps personnel is funded through this appropriation.
- (2) <u>Claims, DoD.</u> This appropriation funds validated claims against the Marine Corps, such as those based on damage to private property and injury to non-Government personnel.
- (3) Military Personnel, Navy (MPN) and Reserve Personnel, Navy (RPN). These appropriations fund personnel expenses, such as pay and allowances of Navy and Navy Reserve personnel assigned to the Marine Corps and Marine Corps Reserve in the medical, dental, chaplain, and other such fields and some personnel associated with Marine Corps-related RDT&E efforts.
- (4) Operation and Maintenance, Navy (O&MN). Through the O&MN appropriation, the Navy funds the operation and maintenance of Marine Corps aircraft ground support equipment which directly supports the aircraft and naval hospital complexes that serve military personnel and their dependents aboard Marine Corps installations.
- (5) Operation and Maintenance, Navy Reserve (O&MNR). With the O&MNR appropriation, the Navy funds the operation and maintenance of Marine Corps Reserve aircraft and ground support equipment which directly supports such aircraft.

- (6) <u>Aircraft Procurement, Navy (APN)</u>. Through the APN appropriation, the Navy funds Marine Corps aircraft, aircraft modification, support equipment, and initial and replenishment spare parts procurement.
- (7) Weapons Procurement, Navy (WPN). The WPN appropriation funds aircraft carried weapon systems required by the Marine Corps, such as the Sparrow, Sidewinder, and airborne Tow and associated support items, such as aerial targets and replenishment spares.
- (8) Other Procurement, Navy (OPN). Navy funding from the OPN appropriation covers the procurement of such Marine Corps items as communication security, nontactical air traffic control communications equipment, and aircraft ordnance.
- (9) Research, Development, Test, and Evaluation, Navy (RDT&E,N). This appropriation covers Marine Corps-managed RDT&E efforts, such as those involved in the landing vehicle tracked (experimental), some Marine Corps data systems, and

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selected joint tactical communications programs. It also covers the Marine Corps' share of Navy-managed joint weapon system programs such as V/STOL development.

- (10) <u>Military Personnel</u>, <u>Air Force (MPAF)</u>. This appropriation supports the Marine Corps by providing veterinary services at major installation. These services include the nonreimbursable inspection of meat and dairy products for Government messes and commissaries and the reimbursable care of pets belonging to military personnel and their dependents.
- E. Other Support. The Marine Corps receives various support from other sources, such as the ones listed below:
- (1) Nonreimbursable Training Support. The Marine Corps receives nonreimbursable training support from the other military services. Most of this support is the result of course consolidations effected by the Interservice Training Review Organization and other agreements. For instance, the Navy hosts virtually all aviation and most cryptographic courses, the Army hosts all formal Marine Corps tank, artillery, and improved HAWK training, and the Air Force hosts courses in meteorology and aerial navigation.
- (2) <u>Nonreimbursable Operational Support</u>. The other military services, mainly the Navy, provide operational support to the Marine Corps on a nonreimbursable basis. For instance, the Navy, as part of the Navy/Marine Corps team, provides

construction and logistic support units to reinforce Marine Corps assets during amphibious operations.

- (3) <u>Administrative assistance</u>. The Marine Corps receives assistance in the administrative aspects of material procurement from the General Services Administration (GSA), the Defense Logistics Agency (DLA), and the Navy, Army, and Air Force.
- (4) Educational Assistance. The Department of Education reimburses the Marine Corps for the costs of dependents' schools on various Marine Corps installations. Reimbursable costs include salaries and the construction, operation, and maintenance of facilities. Teachers, however, are counted against the Marine Corps civilian personnel end-strength ceilings.

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MARINE CORPS COST FACTORS MANUAL

APPENDIX B

LIFE CYCLE COST

1. GENERAL. There is a tendency for decisionmakers in evaluating alternative means of satisfying a given requirement to select those items that have the lowest investment cost. The reasons for this appear to be that investment costs are (1) usually more visible than other costs, and (2) greater than development costs. Ironically, operating and support costs, which are usually greater than investment costs, are often ignored or given little significance. In order to minimize this tendency and to give visibility to outyear "tails" attached to current investment decisions, the concept of Life Cycle Cost (LCC) has been adopted by the DoD.

LCC is the total amount of expenditures directly or indirectly associated with a system or item of equipment throughout its development and economic life. These expenditures include research, development, test, and evaluation (RDT&E); investment; and operating and support costs. By considering LCC, a decisionmaker can improve the decisions related to systems acquisition.

2. <u>MINIMIZING LCC</u>. In order to make a proposed system more affordable, project officers and decisionmakers should ensure that LCC is minimized for a given (required) level of effectiveness. There are numerous means of accomplishing this. For instance, analysts can frequently:

a. Effect tradeoffs among such things as desired performance levels and item characteristics. In some cases, this may necessitate the modification of the system's required operational capability documentation.

b. <u>Improve design to:</u>

- (1) Reduce the expense of each item to be procured.
- (2) Increase the effectiveness of each item, which in turn could reduce the number of each item required.
- (3) Use components common to items already in the inventory.
 - (4) Reduce the frequency, extent, and cost of repair.
- (5) Reduce the required number, grade, and proficiency level of operator and maintenance personnel.
- (6) Extend the expected economic life of the item, thereby reducing its average annual cost of investment.
- c. Consider alternatives to the system under consideration as LCC's are considered.

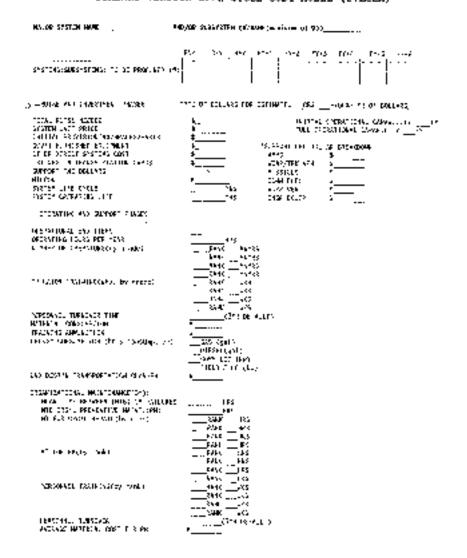
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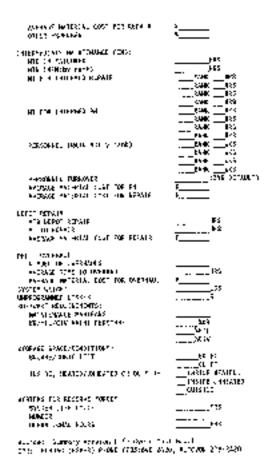
- 3. <u>METHODOLOGY</u>. The Marine Corps has two cost models which aid in the development of realistic LCC estimates.
- a. Marine Corps Cost Analysis Strategy Assessment (MCCASA) Model. A complete, flexible model which requires detailed data input. It can be used at any level in the acquisition cycle, but is most applicable as a project matures and detailed project data becomes known.
- b. Summary Version Life Cycle Cost (SVLCC) Model. A simplified costing approach which is used (1) primarily in the earliest stages of project development, and (2) for POM initiative documentation of total outyear LCC's. The level of data detail required to run the model is more simplified in comparison to the MCCASA Model.

The MCCASA and SVLCC Models allow Marine Corps personnel to produce cost estimates based on a standardized methodology. This, in turn, allows decisionmakers to compare cost estimates of various programs. The data required to produce these estimates begins with the input to the SVLCC Model (see Figure B-1). This data is not extensive, but gathering it enables Marine Corps personnel to become familiar with costing terms and data sources. Cost factors (i.e., dollar escalators,

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MARINE CORPS COST FACTORS MANUAL

APPENDIX C

GLOSSARY

PURPOSE. This glossary is designed to define and explain a broad collection of terms pertaining to the whole spectrum of financial planning, programming, cost estimating, and economic analysis, particularly as they pertain to the Federal Government. Terms included are not limited to those appearing in this Manual, albeit a special effort had been made to emphasize the area for factors. A number of budgetary terms have been included in the glossary because their use is prevalent in Government financial management. However, most of the computed figures in this Manual do not, in fact, relate to

those in Marine Corps budgets and are not suitable for use in budget formulations. Terms defined or explained in the text of this Manual and/or in tables may not be repeated herein.

<u>USE</u>. This glossary should serve as a convenient reference and, with careful reading, will enhance the understanding and usefulness of this Manual. To derive maximum utility from this Manual, the analyst should be totally familiar with all the terms, phrases, and concepts in the glossary and know how they relate to each other and to cost factors. Every user of this Manual, even the experienced cost analyst, will gain insight from a perusal of this glossary.

FORMAT. Terms in this glossary are organized alphabetically. If a term pertains to a particular part of this Manual, a reference is made by chapter and, where applicable, by section and table. When terms interrelate, such as in the case of "Average," "Mean," "Median," and "Mode," they are cross-referenced. Every effort has been made to simplify and clarify the explanation of complex terms and concepts. To this end, examples are freely employed.

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<u>ACQUISITION</u>: The process for obtaining systems, equipment, or modifications to existing inventory items.

<u>ACQUISITION RISK</u>: The chance that some element of an acquisition program produces an unintended result with an adverse effect on system effectiveness, suitability costs, or availability for deployment.

ACTUAL COST: A cost sustained in fact, on the basis of costs incurred, as distinguished from forecasted or estimated costs.

ACTUAL DOLLARS: Expenditures as recorded in prior time periods.

ALLOCATION: An authorization by a designated official of the DoD to make funds available within a prescribed amount to an operating agency for the purpose of making allotments; i.e., the first subdivision of an apportionment.

ALLOTMENT: The authority, expressed in terms of a specific amount of funds granted by competent authority to commit, obligate, and expend funds for a particular purpose. Obligation and expenditure of funds may not exceed the amount specified in the allotment, and the purpose for which the authorization is made must be adhered to. Allotments are granted for all appropriations except the operating accounts, such as Operation and Maintenance (O&M) and Research, Development, Test, and Evaluation (RDT&E), which use operating budgets. All allotments must be accounted for until the

appropriation lapses or until all obligations are liquidated, whichever occurs first, and are reported on NAVCOMPT form 2025 (Status of Allotment Report).

<u>ALTERNATIVES</u>: Two or more possible ways to fulfill the same objective. Ideally, the most cost effective approach is the one selected. See COST EFFECTIVE ALTERNATIVE.

APPLIED COST: See COST, APPLIED.

<u>APPORTIONMENT</u>: A determination made by the Office of Management and Budget which limits the amount of obligations or expenditures which may be incurred during a specified time period. An apportionment may limit all obligations to be incurred during the specified period or it may limit obligations to be incurred for a specific activity, function, project, object, or combination thereof.

<u>APPROPRIATION</u>: Budget authority granted by Congress which allows agencies to incur obligations and make expenditures for specific purposes and in specific amounts. Refer to paragraph 1001.6.

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<u>ASSUMPTIONS</u>: Judgments pertaining to unknown factors which in cost analyses are made in determining alternative courses of action.

AUTHORIZATION: Annual legislation emanating from certain congressional committees which authorizes appropriations for specified purposes. For example, the Armed Services of the two Houses authorize appropriations for DoD for such things as weapons procurement, military end strength, and military training student loans. Authorization does not constitute an appropriation or convey obligational authority.

AVAILABILITY: A measure of the degree to which an item is in the operable and committable state at the start of a mission when mission is called for an unknown (random) time.

AVERAGE: A number that typifies a set of numbers related to a common subject. There are different types of averages: their application varies with the problem involved. See: MEAN, MEDIAN, MODE, AND SAMPLE.

AVERAGE COST: See: COST, AVERAGE.

AVERAGE UNIT FLYAWAY COST: The cost related to the production of a usable end-item of military hardware. Flyaway cost is defined in DoD 7000.1M and includes the cost of procuring the basic unit (airframe, hull, chassis, etc.), a percentage of

basic unit for changes allowance, propulsion equipment, electronics, armament, other installed Government-furnished equipment, and nonrecurring production costs. Flyaway cost equates to rollaway and sailaway cost.

BASE PERIOD: The time interval selected to determine the base values of variables for use in current planning and programming and/or the time interval to which index numbers relate. A reference period which determines a fixed-price level for comparison in economic escalation calculations. The price level index for the base year is 1.000. If specified date is prior, escalate, if subsequent, deflate for cost comparison. In programming it is traditional to use the fiscal year plus one as the base year; i.e., 1 October 1989 marked the beginning of FY90 and programming base year FY-91. See INDEX NUMBER. Also refer to paragraph 1001.3 and Table 7A1, Cost Deflators/Inflators.

BASELINE COST ESTIMATE: A detailed estimate of acquisition and ownership costs. This estimate is performed early in the program and serves as the base-point for all subsequent tracking and auditing purposes.

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BENEFIT: Degree of attainment in terms of an objective sought, rather than in terms of output per se. For example, if one objective of the Marine Corps was, by 1988, to have 100 percent of its recruits be high school graduates, then a potential measure of benefit attributable to a program would be the increase in the percentage of high school graduates.

<u>BENEFIT ANALYSIS</u>: Examination to identify, measure, and evaluate the benefits for each proposed alternative. See BENEFIT.

BENEFIT-COST: See COST-BENEFIT ANALYSIS.

BUDGET: A plan of operations for a fiscal period in terms of (a) estimated costs, obligations, and expenditures; (b) source of funds for financing including anticipated reimbursements and other resources; and (c) history and workload data for the projected programs and activities.

BUDGE AUTHORITY: Authority provided by law to enter into obligations which generally result in immediate or future outlays of Government funds. The basic forms of budget authority are: appropriations, contract authority, and borrowing authority.

BUDGET YEAR: The year following the current fiscal year for which the budget estimate is prepared. For example, if the

current fiscal year is FY-90, the budget year would be FY-91.

<u>BUDGETING</u>: The process of translating planning and programming decisions into specific projected financial plans. Budgets are short-range segments of adopted action programs which set out planned accomplishments and estimate the resources to be applied for the budget periods to attain those accomplishments.

COMMON COST: See: COST, COMMON.

<u>CONSTANT BUDGET DOLLARS</u>: Constant budget dollars are partially escalated. As with constant dollars, they assume funds will be obligated in the base year, but outlay is assumed to be per historical outlay patterns. Thus, additional dollars to cover escalation experienced during the outlay period are included.

CONSTANT DOLLARS: Constant dollars or "now-year dollars" include no escalation. They assume a product will be ordered and delivered in the base year and all funds will be obligated and outlaid within the same year. Constant dollar values remove the effect of inflation. Thus costs in 1967, for instance, can be compared to those in 1985. Derived by using indices, see INDEX NUMBER and BASE PERIOD. Refer to Table 7A1, COST DEFLATORS/INFLATORS.

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COST: The value of resources expended or given up in producing goods or services. See: COST ALLOCATION; COST, INDIRECT; and COST, OPPORTUNITY.

COST ACCOUNT: A management control point at which actual costs can be accumulated and compared to budgeted cost for work performed. A cost account is a natural control point for cost/schedule planning and control, since it represents the work assigned to one responsible organizational element on the contract work breakdown structure element.

COST, ACTUAL: Cost incurred in fact as opposed to standard or estimated cost. See: COST, STANDARD AND COST, ESTIMATED. Refer to paragraph 1001.5.

COST ALLOCATION: The portion of joint or indirect assets assigned to a particular objective such as a job, a service, a project, or a program. See: COST, INDIRECT. Refer to paragraph 1001.5.

<u>COST ANALYSIS</u>: Determination of actual or estimated costs of relevant spending options. Its purpose is to translate the physical resource requirements (equipment, personnel, etc.) associated with alternatives into estimated dollar costs. The

translation produces direct cost comparisons among alternatives. A process employed to develop or assess the reasonableness and validity of resources requirement estimates for military systems and programs. This process includes a statement or report of the assessment together with related conclusions. See: COST, ACTUAL and COST, ESTIMATED. Also refer to paragraph 1002.

<u>COST APPLIED:</u> The value of resources consumed during a given period regardless of when ordered, received, or paid for. Generally, applied costs are related to program outputs so that such costs become the financial measures of resources consumed or applied in accomplishing a specific purpose.

COST, AVERAGE: The quotient of total cost divided by corresponding output. Also, the sum of average fixed-cost per unit of output plus average variable cost per unit of the same output. See: COST, FIXED and COST, VARIABLE. Refer to paragraph 1001.

COST BENEFIT ANALYSIS: Comparison of present values of all benefits less those of related costs, where benefits can be valued in dollars the same way as costs. The purpose is to select the alternative which maximizes the present value of the net benefit of the alternative or program and to select the best combination of alternatives or programs. See: PRESENT VALUE. Refer to Table 7A2, Present Value/Discount Factors.

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<u>COST CENTER</u>: A group of homogeneous functions for which identification of costs is desired and which is amenable to cost control through one responsible supervisor.

COST, COMMON: See: COST, INDIRECT and COST, JOINT.

<u>COST CONTROL:</u> A system for keeping actual costs within standardized limits. See COST, STANDARD.

COST, DIRECT: Any cost which is identified specifically with a particular final cost objective or goal. It is not necessarily limited to items incorporated into the end product as labor or material. Can be either fixed or variable. See: COST OBJECTIVE. Refer to Tables 4A1 through 4A4.

COST EFFECTIVE ALTERNATIVE: That alternative which (1) maximizes benefits when costs for each alternative are equal (the most effective alternative); or (2) minimizes cost when benefits are equal for each alternative (the most efficient alternative); or (3) maximizes differential output per dollar difference when costs and benefits of all alternatives are unequal. See: COST BENEFIT ANALYSIS, EFFECTIVENESS, AND

EFFICIENCY.

<u>COST EFFECTIVENESS</u>: A comparative evaluation derived from analysis of alternatives (action, methods, approaches, equipment, weapon systems, support systems, force combinations, etc.) in terms of the interrelated influences of cost and effectiveness in accomplishing a specific mission.

COST EFFECTIVENESS ANALYSIS: The quantitative examination of alternative systems for the purpose of identifying the preferred one and its associated equipment, organizations, etc. The examination aims at finding more precise answers to questions and not at justifying a conclusion. The analytical process includes tradeoffs among alternatives, design of additional alternatives, and the measurement of the effectiveness and cost of the alternatives. See: COST EFFECTIVE ALTERNATIVE. Refer to Table 7A1, Cost Deflators/Inflators and Table 7A2, Present Value/Discount Factors.

<u>COST ELEMENTS:</u> The segments of total cost given separate treatment in the analysis. See: COST, DIRECT and COST, INDIRECT. Refer to Tables 4A1 through 4A4 and 4B1.

<u>COST ESTIMATE:</u> A result or product of an estimating procedure which specifies the expected dollar cost required to perform a stipulated task or to acquire an item. A cost estimate may constitute a single value or a range of values.

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COST ESTIMATING RELATIONSHIP (CER): A mathematical relationship which defines cost as a function of one or more parameters such as performance, operating characteristics, physical characteristics and a particular cost associated with it. The expression may be a simple average, percentage, or a complex equation. For example, estimated costs of an aircraft airframe (dependent variable) might be determined, using regression analysis, to be a function of airframe weight, delivery rates and speed (independent variables). The CER shows how the value of such independent variables are converted into estimated costs. See: COST, ESTIMATED and REGRESSION ANALYSIS.

<u>COST, ESTIMATED</u>: A cost projected for expected transactions, based upon information available. Does not pertain to estimates of costs already incurred. See: COST, STANDARD. Refer to paragraph 1002.

<u>COST, FIXED:</u> Cost incurred whether or not any quantity of an item is produced. Does not fluctuate with variable outputs.

For example, the rental cost for a facility might be treated as a fixed cost because it does not vary with output. See: COST, VARIABLE.

<u>COST GROWTH</u>: The marginal increase in cost of a program that has not grown in terms of benefit, output, or level of activity.

<u>COST</u>, <u>IMPUTED</u>: A cost that does not appear in accounting records and does not entail dollar outlays. For example, interest on ownership equity in facilities as a part of operating expenses.

COST, INCREMENTAL: Increase in costs per unit increase in output. If incremental cost per ton is \$100 for an increase in production from 100 to 150 tons per month but only \$75 per ton for an increase in output to 200 tons per month, the incremental cost in total operations would be \$5000 for adding 50 tons of output and only \$7500 for adding 100 tons per month. See: COST, AVERAGE and COST, MARGINAL. Refer to paragraph 1001.1.

COST, INDIRECT: Any cost not usually identified with a single final cost objective. Includes overhead and other fixed-costs and categories of resources other than direct costs, required to add up all segments of total cost. For example, the cost of bookkeeping is often not identified with a single type of output. See: COST, FIXED. Refer to Tables 4A1 through 4A4.

<u>COST, INDUCED</u>: All uncompensated adverse effects caused by the construction and operations on a project or program. For example, deterioration in environmental quality resulting from a water resource project.

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COST, JOINT: Costs shared by two or more activities.

COST, MARGINAL: Change in total cost due to a change in the cost of the next unit output. It is a special case of the more general term, incremental cost. See: COST, AVERAGE and COST, INCREMENTAL. Refer to paragraph 1001.1.

COST OBJECTIVE FINAL: A cost objective which had allocated to it both direct and indirect costs and, in the contractor's accounting, is the final cost accumulation point. See: COST ALLOCATION; COST, DIRECT; and COST, INDIRECT.

COST AND OPERATIONAL EFFECTIVENESS ANALYSIS (COEA): A COEA is an analysis of the costs and operational effectiveness for each of a set of alternative courses of action to meet stated needs. In the material acquisition process, the COEA produces

information regarding the estimated costs and operational effectiveness of alternative material systems and the associated programs for acquiring each alternative.

<u>COST, OPPORTUNITY:</u> The benefits which might have been realized by one alternative use of resources, but which are lost if these resources are used in another option. See: COST. Refer to Table 7A1, Cost Deflators/Inflators.

<u>COST OVERRUN (UNDERRUN)</u>: The net change in an estimated or actual amount, from a base figure previously established, which is not attributable to any other cause of cost growth. Refer to Table 7A1, Cost, Actual.

COST, STANDARD: A predetermined cost criterion. A basis for pricing outputs, evaluating performance, and preparing budgets. May be expressed as unit cost for an item or as a total cost for a program. See: COST ACTUAL.

COST, SUNK: A resource which has already been consumed as the result of a prior decision and is not recoverable. Sunk costs have no bearing on current investment decisions because the resources are lost regardless of the course of action taken. For example, past R&D investment in a project represents a sunk cost and is not relevant in deciding whether or not to continue.

COST, TOTAL: Sum of fixed and variable costs.

<u>COST</u>, <u>UNDISTRIBU</u>: Cost incurred but not allocable to specific projects or programs, such as overhead costs for staff personnel working on several projects or programs. See: COST, INDIRECT.

COST, UNIT: Cost of any type per unit of output.

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COST, VARIABLE: Cost which varies with the quantity of output
produced.

<u>CURRENT YEAR</u>: The fiscal year in progress. See: BUDGET YEAR.

<u>CURRENT-YEAR DOLLARS OR THEN-YEAR DOLLARS</u>: Dollars which include the effects of escalation and reflect the price levels expected to prevail when the expenditure is actually made.

DATA: Numeric information or evidence of any kind.

DEPENDABILITY: A measure of the item operating condition at
one or more points during the mission, including the effects of

reliability, maintainability, and survivability, given the item condition(s) at the start of the mission. It may be stated as the probability that an item will (a) enter or occupy any one of its required operational modes during a specific mission, and (b) perform the functions associated with those operational modes.

<u>DEPRECIATION</u>: The reduction in the value of an asset estimated to have occurred during an accounting period due to age, wear, usage, obsolescence, or the effects of natural elements such as decay or corrosion; i.e., the value of an asset "used up."

<u>DESIGN TO COST</u>: Management concept wherein rigorous cost goals are established during development and the control of systems costs (acquisition, operating, and support) to these goals is achieved by practical tradeoffs between operational capability, performance, costs, and schedule. Cost, as a key design parameter, is addressed on a continuing basis and as an inherent part of the development and production process.

DETAILED COST ESTIMATE: Sometimes referred to as "grass roots" or "bottoms-up" estimate. An industrial engineering based approach relying on detailed simulation of all the operations, and an exhaustive list of all the materials required to develop and produce a unique and specifically defined piece of equipment. This procedure utilizes a combination of engineered standards produced from time and motion studies, cost standards, vendor quotes man loading requirement by work center, and station in conjunction with appropriate rates and factors.

DIRECT COST: See: COST DIRECT.

<u>DISCOUNT FACTOR:</u> The discount factor applies a discount rate (see below) to future dollar amounts. It is the interest rate used in calculating the present value of extended yearly costs. It translates expected cost of benefit in any specific future year into its present value. Mathematically, the discount factor is

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1/(1+R)t where r is the discount rate and t is the number of elapsed years. See: PRESENT VALUE. Refer to Table 7A2, Present Value/Discount Factors.

<u>DISCOUNT RATE</u>: In theory, it is the preference for having something now rather than later. In practice, it is the interest rate used in calculating the present value of expected yearly costs and benefits. It represents the cost of capital or the interest rate currently obtainable on loanable funds. For DoD the discount rate is 10 percent. This represents the

average rate of return of capital in the private sector (excluding inflation). See: PRESENT VALUE. Refer to Table 7A2, Present Value/Discount Factors.

<u>DISCOUNTING</u>: A computational technique using a discount rate to calculate present value of future benefits and costs. Used in evaluating alternative investment proposals that can be valued in money. Assumes an investment proposal should be accepted if the present value of its projected earnings exceeds the amount of the investment. See: PRESENT VALUE. Refer to Table 7A2, Present Value/Discount Factors.

ECONOMIC ANALYSIS: A systematic approach to the problem of choosing how to employ scarce resources, and an investigation of the full implications of achieving a given objective in the most efficient and effective manner. The determination of efficiency and effectiveness is implicit in the assessment of the cost effectiveness or alternative approaches. See: COST EFFECTIVENESS ANALYSIS, EFFICIENCY, PROGRAM ANALYSIS, PROGRAM EVALUATION, and SYSTEMS ANALYSIS. Refer to paragraph 1002.

ECONOMIC EFFICIENCY: That mix of alternative factors of production (resources, activities, programs, etc.,) that results in maximum outputs, benefits, or utility for a given cost; alternatively, it represents the minimum cost at which a specified level of output can be maintained. Often, because of numerous constraints on costs, programs, and activities, the term is used to refer to an alternative which is more efficient than another. Thus, program A may be referred to as being more economically efficient than alternative program B. See: COST EFFECTIVE ALTERNATIVE, EFFECTIVENESS, and EFFICIENCY.

ECONOMIC LIFE: The period of time over which the benefits to be gained from an investment may reasonably be expected to accrue. (Although economic life is not necessarily the same as mission life, physical life, or technological life, it is significantly affected by both the obsolescence of the investment itself and the purpose it is designed to achieve.) The economic life of an investment begins in the year in which the investment

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starts producing benefits. Thus, it is possible the investment may occur several years prior to the start of an alternative's economic life. See: INVESTMENT and INVESTMENT PERIOD.

ECONOMIES OF SCALE: Reductions in unit cost of output resulting from the production of additional units. Stems from (a) increased specialization of labor as volume of output increases, (b) decreased unit costs of materials, (c) better utilization of management, (d) acquisition of more efficient equipment, and (e) greater use of by-products. For example,

the cost of producing a new aircraft for which the prototype cost \$30 million, might be \$3 million each for 100 aircraft and only \$1 million each for 1000 aircraft due to economies of scale.

EFFECTIVENESS: Performance toward an objective. Ideally, it is a quantitative measure which can be used to evaluate the performance level achieved in relation to criteria pertaining to end objectives. An example of such a measure would be the increase in annual earnings of a group of participants in a Federal retaining program. This example assumes an objective of the retaining program is to increase the level of income of program participants. Under this assumption, a measure of output, such as the number of people who completed the program, while informative, would not be a valid measure of effectiveness since the objective is to increase income, not merely to retain people. Thus, a program can be efficient but ineffective and vice versa. See: BENEFIT and EFFICIENCY.

EFFICIENCY: The degree to which outputs are maximized as inputs are minimized. See: EFFECTIVENESS.

ESCALATION: Escalation is not synonymous with inflation, but includes cost growth associated with inflation as well a non-inflationary "real" cost growth. Real cost growth changes are caused by supply and demand and other economic forces, changes in design, quantity and schedule, estimating changes and errors, and other factors.

ESTIMATED COST: See: COST, ESTIMATED.

EXPENDITURES: A charge against available funds. It is evidenced by voucher, claim, or the document approved by competent authority. Expenditure represents the actual payment of funds.

EXPENSES: Cost of Operation and Maintenance of activities on the accrual basis over time, as distinguished from costs of acquisition of property. Expenses include, but are not limited to, costs of (a) civilian personnel services, (b) military personnel services, (c) supplies and material consumed or applied, (d) travel and transportation of personnel, (e) rental

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of facilities and equipment, (f) equipment (unit value less than \$15,000), and (g) services received (purchased utilities, leased communications, printing and reproduction, and other). The cost of minor construction of a value of \$100,000 or less is included as an expense.

FACTOR ANALYSIS: A technique for reducing the number of

variables to be included in a model. A factor is a grouping of variables which appear to represent the same underlying characteristics. Factor analysis proceeds on the premise that a large number of variables may be grouped into a smaller number of variables or factors representative of the original variables, with little or no loss of discriminatory information. For example, a large number of population summaries based on variables such as age, occupation, education, fertility, home ownership, race, sex, etc., might be reduced to three factors: economic category, family type, and ethnic status (depending upon the purpose to be served by the data). Correlation and regression analysis are often used in determining which variables will be retained in the model. See: REGRESSION ANALYSIS. Refer to paragraph 1002.2a.

FIRST AND SECOND DESTINATION TRANSPORTATION CHARGES: Knowing the size, weight, and security measures needed for shipping your system, first destination transportation charges are the cost to ship the system from the manufacturer to Albany and/or Barstow. Second destination transportation charges are the costs associated with transporting your system from Albany/Barstow to the user(s).

FISCAL YEAR (FY): Accounting period beginning 1 October and ending 30 September of the following calendar year. The FY is designated by the calendar year in which it ends. FY90 begins on 1 October 1989, and ends 30 September 1990.

FUTURE-YEARS DEFENSE PROGRAM (FYDP): The FYDP summarizes all approved programs of the entire DoD. Resources or inputs required for 5 years are combined with military outputs or programs for the same period. The FYDP is expressed in terms of programs, program elements, and resource categories: (a) mission operations, (b) administration, (c) supply operations (d) maintenance of material, (e) property disposal (f) medical operations (g) base services, (h) maintenance of real property, (i) utility operations, (j) other engineering support, (k) minor construction, and (1) personal support.

FYDP DOLLARS: FYDP or "Then-year dollars," are fully escalated. They include the escalation for outlay built into constant budget dollars as well as escalation to cover the period between the base year and the first year of program execution. FYDP dollars in the base year are equal to constant budget dollars.

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GOVERNMENT FURNISHED/ADDED EQUIPMENT: Items in the possession of, or acquired by, the Government and delivered or otherwise made available to the contractor for use in manufacturing the system. Examples: batteries, cables, wires, tires, etc.

HOMOGENEOUS MAJOR SYSTEM: A system in its total context that has one reliability and maintainability rate. Examples: a rifle, most radios, most vehicles, a computer, generators, etc.

IMPUTED COST: See: COST, IMPUTED.

INCREMENTAL COST: See: COST, INCREMENTAL.

INDEPENDENT COST ESTIMATE: An estimate of program cost developed outside normal advocacy channels by a team which generally includes representation from cost analysis procurement, production management, engineering, and program management.

INDEPENDENT GOVERNMENT COST ESTIMATE: An estimate of the cost for goods and/or estimate services to be procured by contract. Such estimates are prepared by Government personnel; i.e., independent contractors.

<u>INDEX</u>: Statistical device for measuring changes in groups of data. Serves as a yard stick of comparative measure. See: INDEX NUMBER.

INDEX NUMBER: A number used to measure change by relating a variable in one period to the same variable in a base period. The index number is usually found by dividing the variable by the base period value and multiplying by 100. For example, in the following table, 1966 is the base year and the budget column entries from 1967 through 1970 are the variables. By dividing the 1967 budget by the base period value and then multiplying by 100, index A for FY 1967 is derived. Sometimes a 3 year period is used as a base and an average of the 3 years must be taken as the base. See: BASE PERIOD. Refer to paragraph 1001.3 and Table 7A1, Cost Deflators/Inflators.

INDIRECT COST: See: COST, INDIRECT.

INDUCED COST: See: COST, INDUCED.

INFLATION: The upward movement of price levels over time. Decrease in the value of money due to rising prices. Inflation is sometimes ignored in program analysis by assuming constant prices. When there is reason to believe changes in price levels will affect the choice between alternatives, the current dollar estimates are converted to constant dollar estimates.

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See CONSTANT DOLLARS. Refer to paragraph 1001.3 and to Table 7A1, Cost Deflators/Inflators.

INFORMATION SYSTEM: An organized collection, storage, and
presentation system of data for decision making. Can be either

manual, computerized, or a combination of both.

INITIAL PROVISIONING SPARES/PARTS: When the system is distributed to the user, some quantity of spares and replacement parts will accompany the system. These spares and repair parts are furnished to the various levels of maintenance to establish the maintenance capability. They are funded from PMC vice O&MMC.

INTEGRATED LOGISTICS SUPPORT (ILS): A composite of all the support considerations necessary to assure the effective and economical support of a system for its life cycle. It is an integral part of all other aspects of system acquisition and operation. ILS is characterized by harmony and coherence among all the logistic elements. The principal elements of ILS related to the overall system life cycle include:

- (a) Maintenance Plan
- (b) Support and Test Equipment
- (c) Supply Support
- (d) Transportation and Handling
- (e) Technical Data
- (f) Facilities
- (q) Personnel and Training
- (h) Logistics Support Resource Funds
- (i) Logistics Support Management Information

INTEREST: Price paid for the use of money. See: DISCOUNTING
AND PRESENT VALUE.

ITERATIVE PROCESS: A process which uses a repeating value that
comes closer to the desired result with each repetition.

INVESTMENT: Costs associated with the acquisition of real
property and major end items of equipment.

INVESTMENT PERIOD: The period of time, in years, from the start of investment until the investment is completed. Many investments are made for 2 or more years, with investment periods occurring in stages. For example, 100 tanks may be delivered the first year, with investment periods occurring in stages. For example, 100 tanks may be delivered the first year, 300 the second year, etc., until the total investment has been accomplished. See: ECONOMIC LIFE and INVESTMENT.

JOINT COST: See: COST, JOINT.

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LEAST-COST ALTERNATIVE: The alternative producing, at least cost, the same or greater quantity of given output than any other alternative. See: ECONOMIC EFFICIENCY, EFFECTIVENESS, and EFFICIENCY.

<u>LIFE-CYCLE COST</u>: The total cost to the Government for the development, acquisition, operation, logistic support, and where applicable, disposal of a system or set of forces over a defined life span. See: <u>LIFE-CYCLE COSTING</u>.

<u>LIFE-CYCLE COSTING:</u> An acquisition technique that considers operating, maintenance, and other costs of ownership as well as acquisition price in the award of contracts for hardware and related support. See: <u>LIFE-CYCLE COST</u>.

<u>LOGISTIC SUPPORT:</u> The composite of actions necessary to assure the effective and economical performance of the systems and equipments which, functioning together, comprise a weapons system and in turn, and operating force.

MAINTAINABILITY: A characteristic of design and installation which inherently provides for an item to be retained in or restored to a specific condition within a given time, when it is maintained per prescribed procedures and resources.

MARGINAL ANALYSIS: Technique for evaluating an added increment. A basis for comparing the added cost to the benefit gained. The term "marginal" refers to the last increment of whatever is being considered. Benefits per unit of cost will be maximized when the additional increment of revenues and additional increment of costs are equal. See: COST, MARGINAL. Refer to paragraph 1001.1.

MARGINAL COST: See: COST, MARGINAL.

MARGINAL COST PER UNIT OF INPUT: The change in total cost resulting from a one-unit change in variable input.

MARKUP; MARK: Adjustments to budget submissions by NAVCOMPT, OSD, or OMB analysts. Markups are ordinarily subject to reclama. See: RECLAMA.

MEAN: One of the kinds of averages. The mean (also called arithmetic mean) is what is usually connoted by the term "average." It is computed by summing the values of the items being observed and dividing by the number of observed items. See AVERAGE, MEDIAN, and MODE. Refer to paragraph 1001.1.

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MEASURE OF EFFECTIVENESS: The quantitative expression (sometimes modified by subjective judgment) of the success of a system in achieving a specified objective.

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m \underline{MEDIAN}}\colon$ The central value of a set of observations, such as incomes, arranged in order of magnitude. It is that value which divides the set so an equal number of items are on

either side of it. For example, if we have five items; i.e., 4, 7, 9, 12, 15, the median would be 9 since there are two items above that value and two items below it. If we have an even number of items, the median would be calculated as halfway between the central two items. For example, if we have six items; 4, 7, 9, 12, 15, 20, the median would be calculated: 9+12=10.5. See: AVERAGE, MEAN, and MODE.

MODE: The observation which occurs most frequently in a set of observations. It is a measure of central tendency in a frequency distribution. Often used to average weekly sales and purchases. For example, in the distribution: 2, 3, 5, 5, 8, 12, the mode is 5. More than one mode (bimodal, trimodal), or no mode, is possible when all the values in the distribution are different. See: AVERAGE, MEAN, and MEDIAN.

MODEL: A representation of the relationships which define a system or situation under study. Its purpose is to predict what will happen when a system becomes operational in terms of performance and output. A model may be a set of mathematical equations, a computer program, or any other type of representation, ranging from verbal statements to physical objects. Models permit the manipulation of variables to determine how a process, subject, or concept would behave in different situations. For example, the equation $D = r \times t$ represents a simple model indicating distance is equal to the rate of travel times the time of travel.

MULTIYEAR PROCUREMENT: A method of competitively purchasing up to a 5 year requirement in one contract which is funded annually as appropriations permit. If necessary to cancel the remaining quantities in any year, the contractor is paid an agreed-upon portion of the unamortized nonrecurring start-up costs.

<u>OBJECTIVES</u>: Statements of what we are trying to accomplish and why set forth, if possible, in measurable terms. In analysis, objectives are stated in a manner which does not preclude alternative approaches.

<u>OBLIGATION</u>: A duty to make a future payment of money. The duty is incurred as soon as an order is placed or a contract is awarded for the delivery of goods and/or performance of services. It is not necessary that goods actually be delivered or services

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actually be performed, before the obligation is created; neither is it necessary that a bill or invoice be received. The placement of an order is sufficient. An obligation legally encumbers a specified sum of money which will require outlay(s) or expenditure(s) in the future.

OBLIGATIONAL AUTHORITY: (a) An authorization by Act of Congress to procure goods and services within a specified amount by appropriation or other authorization; (b) the administrative extension of such authority, as by apportionment or funding; and (c) the amount of authority so granted.

OPERATING AND SUPPORT COST: Those resources required to operate and support a system, subsystem, or a major component during its useful life in the operational inventory.

OPERATING BUDGET - OPBUD OR OB: An OPBUD or OB is the annual budget of an activity stated in terms of budget classification code, functional/subfunctional categories, and cost accounts. It contains estimates of the total value of resources required for the performance of the mission including reimbursable work or services for others. It also includes estimates of workload in terms of total work units identified by cost accounts.

<u>OPERATIONAL EFFECTIVENESS</u>: The overall degree of mission accomplishment of a system when used by representative troops in the context of the organization, doctrine, tactics, threat, and environment in the planned operational employment of the system.

OPERATIONAL SUITABILITY: The degree to which an operationally effective system can be satisfactorily placed in field use, with consideration being given to availability, producibility, transportability, interoperability, reliability, maintainability, and the other "ilities."

OPERATIONS RESEARCH (OR): The professional and academic field concerned with the systematic effort to provide decisions. Operations Research may present a proposed solution to a problem or present the pros and cons of alternatives. A distinctive feature of OR is its application of one or a combination of the scientific disciplines such as mathematics, economics, cost analysis, linear programming, statistics, etc., in addition to subjective methods such as common sense and judgments based on experience. Operations Research might, for example, be used by the Marine Corps to ascertain the most efficient method of transporting supplies around the world. The best procedures for doing so could be determined by developing and analyzing a mathematical model of the Marine Corps material distribution system. See: ECONOMIC ANALYSIS, PROGRAM ANALYSIS, PROGRAM EVALUATION, and SYSTEMS ANALYSIS.

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OPPORTUNITY COST: See: COST, OPPORTUNITY.

<u>OUT-OF-POCKET COSTS</u>: Costs associated with the decision under consideration which require dollar outlays. They may be contrasted with those costs, such as depreciation, which are in

reality allocations of previously incurred costs. See: COST ALLOCATIONS.

OUTLAY: The actual process of transferring funds from the Treasury to pay for goods and services. Outlay rates used in programming reflect historical spending patterns and the fact that although we ask for and receive full obligational authority "up front" we do not spend our money that way. Program costs are subject to escalation during the outlay period. Outlay rates used during the POM are published by the Assistant Secretary of Defense (Comptroller).

<u>OUTPUT</u>: Program results, such as goods produced and services performed, expressed in quantities relatable to specific inputs, organizational missions, and functions. Outputs provide a basis for evaluating the productivity and efficiency of an organization or activity. See: BENEFITS, EFFECTIVENESS, and EFFICIENCY.

OTHER DIRECT SYSTEM COSTS: These costs include such items as test equipment, manuals (operator and maintenance), calibration tools, test stands, special tools, etc.

PARAMETRIC COST ESTIMATE: A cost estimating methodology using statistical relationships between historical costs and other program variables such as system physical or performance characteristics, contractor output measures, manpower loading, etc. Also referred to as top-down approach.

<u>PAYBACK PERIOD</u>: The length of time required for an investment outlay to be recovered. Also referred to as payoff period or cash recovery period. See: INVESTMENT and INVESTMENT PERIOD. Refer to Table 7B1, Investment Payback.

PERFORMANCE BUDGET: A budget which focuses attention upon the general character and relative importance of the work to be done by taking as its basis the estimated cost of programs, functions, and projects designed to accomplish a mission. Performance budgets focus on the cost of a function; for example, operating a rifle range, communications centers, motor pool - rather than the cost of "things" such as supplies, equipment, personnel services, etc.

PHYSICAL LIFE: The estimated number of years a machine, piece of equipment, building, etc., can be used in accomplishing the

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function for which it was procured or constructed. See: ECONOMIC LIFE.

<u>PLANNING</u>: The identification of objectives of an organization and the selection of the best possible courses of action required to attain such objective in terms of relative costs and benefits.

Long-range (strategic) planning involves deciding the organization's business and how it is to be done. Short-range planning encompasses all other management planning responsibilities and focuses on studies and analyses make for the purpose of identifying the specific feasible means for carrying out the chosen courses of action. See: COST BENEFIT ANALYSIS and COST EFFECTIVENESS ANALYSIS. Refer to paragraph 1002.

<u>PLANNING PROGRAMMING BUDGETING SYSTEM (PPBS):</u> A management system

introduced in the Executive Branch in 1965 by the President, comprised of three elements as follows: (a) Planning - the study of objectives and alternative ways to achieve objectives, of future environments, and of contingencies and how to respond to them; (b) Programming - a method or system of describing activities according to objectives or outputs and of relating these objectives to the costs or inputs needed to produce the outputs of effectiveness desired; and (c) Budgeting - the activity through which funds are requested of the President and Congress, appropriated, apportioned, and accounted for.

POINTS OF CHANGE AND PERCENT CHANGE: Measures of change in an index. The terms "point of change" and "percent change" in the index do not mean the same thing. The former is the difference between indexes at two dates; the latter is the difference expressed as a percent of the index at the earlier of the two dates. For example, the rise in the index from 122.6 in April 1963 to 123.5 in July 1963 represents an increase of 0.9 points or an increase of .7 percent. The increase of 0.9 points is the difference between 123.5 and 122.6, while the 0.9 points of increase is 0.7 percent of the index of 122.6 in April (i.e., 0.9/122.6)

PRESENT VALUE (TIME VALUE OF FUTURE CASH FLOWS): In every investment, explicit recognition should be given to the fact a dollar today is worth more than a dollar tomorrow because of interest cost related to all Government expenditures. That is, dollar benefits which accrue in the future cannot be compared directly with investments made in the present because of the time value of money. Discounting is a technique for converting various cash flows to a common point in time to facilitate valid comparisons. Refer to paragraph 1001.3 and Table 7A2, Present Value/Discount Factors.

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PRESENT-VALUE BENEFIT: Calculation of each year's expected benefit multiplied by its discount factor and then summed overall years of the planning period. See: PRESENT VALUE. Refer to Table 7A2, Present Value/Discount Factors.

PRESENT-VALUE COST: Calculation of each year's expected cost
multiplied by its discount factor and then summed overall years

of the planning period. See: PRESENT VALUE. Refer to Table 7A2, Present Value/Discount Factors.

<u>PROGRAM</u>: A mission-oriented endeavor which is defined in terms of the principal actions required to achieve a significant objective. Refer to paragraph 1002.

PROGRAM ANALYSIS: The generation of options to accomplish objectives by comparing alternatives for proposed and ongoing programs. Embraces the processes involved in program planning, program evaluation, economic analysis, systems analysis, and operations research. See: PLANNING, PROGRAM EVALUATION, ECONOMIC ANALYSIS, SYSTEMS ANALYSIS, and OPERATIONS RESEARCH.

PROGRAM COST CATEGORIES: (a) Research and Development. program costs primarily associated with Research and Development efforts including the development of a new or improved capability to the point where it is ready for operational use. These costs include equipment costs funded under the RDT&E appropriation costs. They exclude costs which appear in the Military Personnel, Operation and Maintenance, and Procurement appropriations. (b) Investment. Those program costs required beyond the development phase to introduce into operational use a new capability; to procure initial, additional, or replacement equipment for operational forces; or to provide for major modifications of an existing capability. They include Procurement and Military Construction appropriation costs and exclude RDT&E, Military Personnel, and Operation and Maintenance appropriation costs. (c) Operating. Those program costs necessary to operate and maintain the capability. These costs include Military Personnel, and Operation and Maintenance.

PROGRAM ELEMENT: An integrated combination of men, equipment, and facilities which together constitute an identifiable military capability or support activity. It identifies the mission to be undertaken and the organizational entities to perform the mission. Elements may consist of forces, manpower, materials, services, and/or associated costs as applicable.

PROGRAM EVALUATION: Appraising the efficiency and effectiveness of ongoing or completed programs. Aims at program improvement through comparisons of existing programs with alternative programs and techniques. Uses actual performance data to gauge

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progress towards program goals. See: EFFICIENCY, EFFECTIVENESS, and PROGRAM ANALYSIS.

PROGRAM FACTOR: A rate or ratio used in planning and budgeting
to derive another program measure or cost, usually a ratio based

experience. For example, the rate of fuel consumption multiplied by flying hours programmed equal fuel consumption to be programmed. Refer to Table 4A3, Direct Costs Per Flight Hour and 4B2 Pol Costs.

PROGRAM FINANCIAL PLAN: A projection of the costs for each program relating outputs and benefits to costs and personnel requirements.

<u>PROGRAMMING</u>: The process of determining specific courses of action to be followed in carrying out planned decisions. The total costs to be incurred over a period of years as to personnel, material, and financial resources are considered. See: LIFE-CYCLE COSTING. Refer to paragraph 1004.

QUANTIFICATION: The measurement (not valuation) of the inputs, outputs, or benefits of a program. Consists of listing the magnitudes of all important results, favorable and unfavorable, to which a program will give rise, preferably in a few salient numbers which convey the essence of the choices to be made without forcing them, if possible, into monetary values.

RAM: Reliability, Availability, Maintainability.

RDT&E: RDT&E cost elements could include the costs for: Developmental Engineering, Producibility Engineering and Planning, Tools, Prototype Manufacturing, Data, System Test and Evaluation, Training Services and Equipment, and procurement of facilities for testing development.

RECLAMA: A written position paper which essentially attempts to reverse or reduce a budget markup made by NAVCOMPT, OSD, or OMB analysts. A reclama must contain justification other than what already appears in the budget, and not simply be a reiteration of previously submitted backup information. See: MARKUP; MARK.

<u>RELIABILITY</u>: A fundamental characteristic of an item of material expressed as the probability it will perform its intended function for a specified period of time under stated conditions.

REGRESSION ANALYSIS: A procedure for relating a dependent variable (the estimated variable) to one or more independent variable (the estimator). The relation is in the form of an estimating equation whose purpose is to predict one variable from specified values of others. See: FACTOR ANALYSIS.

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<u>RESOURCES</u>: Assets available and anticipated for operations.

Includes items to be converted into cash and intangibles, such as

people, equipment, facilities; and other things used to plan implement, and evaluate programs and/or systems.

RISK ASSESSMENT: The process of subjectively determining the probability a specific interplay of performance, schedule, and cost as an objective will not be attained along the planned course of action.

<u>SAMPLE</u>: A subject of a given group. Elements are selected intentionally as a microcosm representative of the group being studied. See: AVERAGE.

SAVINGS/INVESTMENT RATIO: A numerical ratio, used when comparing alternatives, of the difference in present value of future costs divided by the difference in investment costs. The ratio is an indication of the effectiveness of higher investments in producing future cost savings. Related to investment payback and/or return on investment, particularly in private industry. See: DISCOUNT RATE, EFFECTIVENESS, INVESTMENT, and PRESENT VALUE> Refer to table 7A2, Present Value/Discount Factors and Table 7B1, Investment Payback.

<u>SELECTED ACQUISITION REPORTS:</u> Standard, comprehensive, summary status reports on major defense systems for management within the DoD.

<u>SERVICEABILITY</u>: A measure of the degree to which servicing of an item will be accomplished with a given time under specified conditions.

SHOULD-COST ESTIMATE: An estimate of contract price which reflects reasonably achievable contractor economy and efficiency. It is accomplished by a Government team of procurement, contract administration, audit, and engineering representatives performing an in-depth cost analysis at the contractors' plants. Its purpose is to develop a realistic price objective for negotiation purposes.

STANDARD COST: See: COST, STANDARD.

SUNK COST: See: COST, SUNK.

SYSTEM: A total operating end item. A system has one set of RAM requirements which may be an aggregate of subsystems.

SYSTEM ANALYSIS: May be viewed as the systematic evaluation, normally through quantitative methods, of activities or alternative courses of action relevant to the attainment of

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to decisionmakers for their consideration. Such analysis emphasizes the system concept, under which any course of action designed to achieve an objective is viewed as a system requiring inputs and producing outputs. The inputs and outputs involved may take on any of a large variety of forms. In this sense, systems analysis encompasses both cost benefit and cost effectiveness analyses as well as other types of analyses which may be more limited in scope. See: COST BENEFIT ANALYSIS, COST EFFECTIVENESS ANALYSIS, and OPERATIONS RESEARCH.

SUBSYSTEMS: A subsystem is one of number of components which by themselves have their own maintenance schedules, and when organized together form a total operating end item. Examples: the Position Location Reporting System (PLRS), the Unit Level Circuit Switch (ULCS), and most aircraft, etc.

TOTAL COST: See: COST, TOTAL.

TOTAL OBLIGATIONAL AUTHORITY (TOA): TOA is the total amount of funds available for programming in a given year, regardless of the year the funds are appropriated, obligated, or expended. TOA includes new obligational authority, unprogrammed or reprogrammed obligational authority from prior years, reimbursements not used for replacement of inventory in kind, advance funding for programs to be financed in the future, and unobligated balances transferred from other appropriations.

<u>UNDISTRIBUTED COST</u>: See: COST, UNDISTRIBUTED.

<u>UNIT COST:</u> See: COST, UNIT.

<u>VARIABLE COST</u>: See: COST, VARIABLE.

WORK BREAKDOWN STRUCTURE: A product-oriented family tree division of hardware, software, services, and other work tasks which organizes, defines, and graphically display the product to be produced, as well as the work to be accomplished to achieve the specified product.

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